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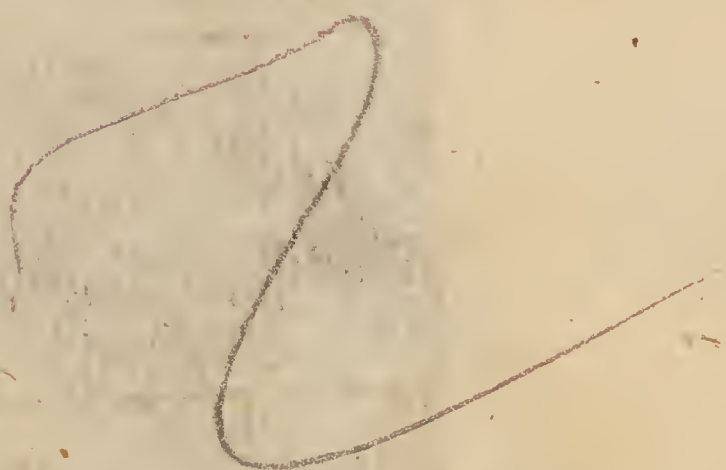

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THE ANALYSIS OF INOCULATION:

COMPRIZING THE

HISTORY, THEORY, and PRACTICE of it:

With an occasional CONSIDERATION

OF THE

Most REMARKABLE APPEARANCES

IN THE

SMALL POCKS.

The SECOND EDITION corrected:

And greatly enlarged, with many material Additions, Cases and Reflections; the Method of exciting the Disease in *Paris* by small Blisters; a short Glossary explaining such Terms of Art, *&c.* as are scarcely avoidable on this Subject, with a new Preface, an Appendix, and a more compleat Index.

By J. KIRKPATRICK, M.D.

——————— *quibus hunc lenire dolorem*
Possis, et magnam morbi deponere partem. HOR.

LONDON:

Printed for J. BUCKLAND, in *Pater-Noster-Row*; and R. GRIFFITHS, opposite *Somerset-House* in the *Strand.*

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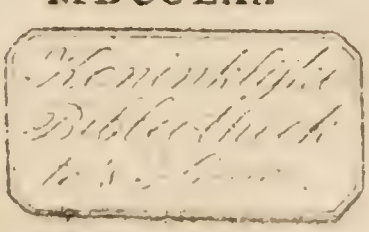

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TO THE

KING.

SIR!

YOUR Majesty's most condescendingly gracious Continuance of the Royal Patronage to this greatly enlarged Edition of *The Analysis of Inoculation*, which Your Royal Grandfather

of glorious Memory vouchſafed to the former, muſt juſtly be aſcribed to that unbounded Affection, with which Your innate Goodneſs regards the Health of all Your Subjects, and of Your whole Species.

The many vital and perſonal Benefits that have accrued to Multitudes, under Your Majeſty's immediate and moſt extenſive Protection, and to many Foreigners prudently imitating them, from this very ſalutary and long approved Practice, have been derived, under GOD, from the great Wiſdom and Philanthropy of Your auguſt Houſe.

Your Majeſty's Royal Anceſtor, GEORGE I. gave the earlieſt Sanction to this Method, by his well-known Diſcernment, his Clemency and Reſolution; firſt in commanding ſome proper

per and merciful Experiments of it, and next in conſenting to, and authorizing, the moſt intereſting Proofs of its Succeſs, in his highly illuſtrious and important Family, as further Securities of our religious and civil Rights; while they alſo preſented ſo many Inſtances of Preſervation, from the deforming and fatal Depredations of the Small Pocks, to his innumerable political Children.

Your Majeſty's immediately ſucceeding Royal Anceſtors, together with Your moſt benign and greatly regretted Father, who ſubmitted Himſelf to this Practice more than thirty Years paſt at *Hanover*; and the moſt truly excellent Princeſs, the happieſt, as beſt, of Royal Mothers, who has bleſt Your People with ſo many very amiable collateral Pledges of their Security and Freedom, had all wiſely allowed the moſt convincing

vincing and important Proofs of their entire Approbation to this Practice, by employing it very happily on ſome of Your Majeſty's highly illuſtrious, Your neareſt and deareſt Relatives.

Theſe Events, ſo truly auſpicious to the Publick, concurring with the very general Succeſs of the Method, had a natural Tendency to induce Your Majeſty, when Prince of *Wales*, to compleat, and as it were to crown, the Favour which Your Royal Anceſtors had afforded it, by Your firſt condeſcending to be called the PATRON of Inoculation. How benign, how juſt an Appellation for the moſt beneficent political Father of a great and happy People! ſince the Royal Patronage of a Method ſo preſervative of Life, may well be conſidered as a mediate Cauſe of the ſubſequent Progeny of thoſe ſo preſerved: while

theſe

theſe again multiplying under the Triumphs and Felicities of the Royal Patron's Reign, muſt increaſe the Number of His happy Subjects, to the reciprocal Increaſe of His own Happineſs; and to the augmented Strength and Splendour of an Empire ſo highly favoured by Heaven in its Councils, in Genius, Arts and Arms; ſo peculiarly favoured in the good, the great, the moſt benign and exemplary Monarchs of Your Majeſty's illuſtrious Royal Houſe.

A due Reflection on that benevolent and even celeſtial Diſpoſition, which firſt ſuggeſted the Patronage of this wonderful, and probably Heaven-deſcended Practice, may have induced an humble, but zealous, Cultivator of it to imagine, he had no very ſlight Pretext for aſpiring to the great Honour of offer-

offering his matureſt Endeavours concerning it, at Your Majeſty's Feet. Where elſe indeed, could they have been offered with equal Juſtice, with equal Propriety and Decorum? ſince their Author is conſcious of a thorough Rectitude, of Intention at leaſt, in attempting to reform a few dangerous Errors in the crude and undiſtinguiſhed Application of this Practice; which ſeem to him to have rendered it leſs unexceptionably ſafe and beneficial to Your Majeſty's Subjects, than he ſuppoſes it may be rendered.

In this Reign of Virtue and Incorruption then, this Æra of the ſtrongeſt reciprocal Affection between the Sovereign and his Subjects (whoſe Intereſts are now ſo practically underſtood to be inſeparable) an ingenuous Attempt for the corporal Health and Increaſe of the

the People, cannot fail, if ſucceſsful, of being acceptable to their KING, whoſe Royal Approbation may ſo greatly promote its good Conſequences. The ſole Impropriety of the Offering muſt conſiſt in its Imperfection, with Regard to the intrinſic and eſſential Dignity of the Monarch, to whom it is moſt humbly dedicated. Yet as Heaven itſelf may probably be delighted with the Integrity of our beſt Intentions, though imperfectly reduced into Action: and as not a few very candid and reputable Friends to Inoculation abroad, have allowed the firſt Edition of this Work ſome warm and unſolicited Teſtimonies of their Approbation, ſuch Conſiderations may probably concur with Your Majeſty's abounding Goodneſs, to make this ſomewhat improved, and largely augmented one, appear the leſs unworthy of Your Royal Patronage.

DEDICATION.

Ever conſcious of the firmeſt Attachment to Your Majeſty's Royal and Heroic Houſe; of the moſt impreſſing Sentiments of Your many Royal Virtues; an humble Individual (a Drop in the amazing Ocean of Your mighty People!) feels himſelf prevented from attempting an adequate Expreſſion of them, by the unbounded Acclamations of Your Subjects, on the exemplary Commencement and Conduct, on the early Triumphs, of Your Reign; and on the late joyful and univerſally ſatisfactory Event, of Your Majeſty's ſelecting and giving them ſo illuſtrious and eſſentially amiable, ſo elegant and accompliſhed a QUEEN! "When the "Throne is thus eſtabliſhed in Righte-"ouſneſs; when Truth and Mercy have "embraced each other," the Proſperity of the People muſt be erected on the moſt durable Foundation. While divine

Pro-

Providence may continue the great, the moſt benign and moſt worthy Poſſeſſors of the *Britiſh* Diadem, in compleat Health, and in the exquiſite Enjoyment of every temporal Bleſſing, to defend and to adorn it, long, O! long beyond the uſual Date of human Strength and Duration! may the People reſume the Maxim of copying after their Sovereigns, and thence attain continual Happineſs, through the active Exerciſe of pure and practical Religion, of every Virtue and moral Excellence!

But not to injure the Publick, by a longer Treſpaſs on Your Majeſty's Indulgence, a ſilent Veneration of the many Royal Virtues inceſſantly exerted for the Protection of theſe unanimouſly loyal, theſe free and opulent Nations, will beſt become a Man affected with the deepeſt Senſe of Your

Majeſty's

DEDICATION.

Majeſty's tranſcendent Goodneſs and Condeſcenſion on this Occaſion; who earneſtly begs Permiſſion, however, to profeſs that ſublime Reſpect, that profound Deference, with which he has the great Honour and Happineſs of being,

May it pleaſe Your Majeſty,

Your Majeſty's

Moſt humbly dutiful,

Moſt faithfully devoted

Subject and Servant,

J. KIRKPATRICK.

PREFACE.

AN excellent medical Axiom affirms, there is no curing an unknown Diſeaſe; which is certain, if we ſuppoſe human Skill and Application, as chiefly effecting the Cure. For notwithſtanding the Sick have ſometimes, and not very ſeldom perhaps, recovered from ſuch Diſeaſes, as their Phyſicians might miſtake either the real Cauſe or Diſpoſition of; ſuch Cures are doubtleſs accompliſhed by the Mediation of the animal Oeconomy and vital Motions, which are exquiſitely conſtituted to remove, or reſiſt, the offending Matter, or Obſtruction to Health: and which muſt, in ſuch miſtaken Inſtances, be alſo capable of ſubduing the Evils attending our erroneous Endeavours to reſtore it. But if our Knowlege of an accidental Diſeaſe be neceſſary to the moſt direct and efficacious Removal of it, how careful ſhould we be to attain the juſteſt Notions, and to arrive at the moſt ſucceſsful Treatment, of one that we venture to excite! I acknowlege for my own Part, that notwithſtanding my entire Conviction of the unparalleled Advantages of Inoculation, and of the religious

and moral Lawfulneſs of it, I have never undertaken the Practice, without a more than ordinary Concern about the Subjects of it: and though I have infuſed, and attended the Infuſion of, the Small Pocks with viſible Hope and Chearfulneſs, they have ever been blended, or chaſtiſed as it were, with an interior Awe and Solicitude.

It has been ſaid in Favour of good Phyſicians, that * Men reſemble Heaven in nothing ſo nearly, as in giving Health to others: And yet, as paradoxical as it may ſeem, it is certain, that although the Inoculator is about to communicate a Diſtemper to a Perſon in good Health, which appears to be inverting the Function of a Phyſician, he approaches nearer to the divine Power of healing (if preventing or obviating may be called ſo) a fatal or dangerous, a loathſome or deforming Degree of the Small Pocks, by a very judicious Inoculation of its Subject, than the collected medical Knowlege of Mankind can as generally effect, with Regard to the Event or Conſequences of any other Diſeaſe, equally popular, acute and mortal. For this Reaſon I have contemplated and exerciſed this particular Branch of Practice, with the more complete Satisfaction to myſelf; as I had a greater moral Certainty of rendering by it a moſt important Service to others. I conſidered the judicious Practice as applied in that auſpicious Time, when the Son of *Syrach* ſays, "There † is good Succeſs in the Phyſicians' Hands;" and thence I concluded them moſt comfortably enjoying the Advantage of their ſucceſsful Endeavours.

On

* Homines nulla in re propius ad Deos accedere, quam ſalutem hominibus dando.

† Eccleſiaſticus, C. xxxviii.

On the other Hand it cannot, and in a Caſe ſo important to Mankind, it ſhould not, be diſſembled, that we have had ſeveral Miſcarriages (though very few in Compariſon with thoſe from accidental Contagion) by this Method. Theſe, ſome have weakly, or lucratively, attempted to evade, or diſguiſe; while others have ſtill more culpably endeavoured to aggravate and multiply them by * downright Falſhoods. But as our earlier Miſcarriages by Inoculation were, upon the whole, in a greater Proportion than the later, it is no unreaſonable Inference, that a ſtricter Attention to the Subject, and a further Experience of it, may hereafter reduce them to the moſt inconſiderable Proportion; if, under the beſt human Conduct, and during the moſt gentle Diſpoſition of the natural Diſeaſe, they ſhould not entirely prevent any: tho' the learned and ingenious Mr. DE LA CONDAMINE ſuppoſes an unexceptionable Succeſs the probable Conſequence.

In Reality, it ſeems upon the whole, as if ſome Miſapprehenſion concerning the Cauſe of the Small Pocks; concerning the eſſential Diverſity of different Conſtitutions and Temperaments with Regard to it; or an Ignorance of the moſt rational Practice in the Diſeaſe, were the Cauſes of ſome of our Miſcarriages by Inoculation. Doubtleſs an Error in any of theſe Reſpects might occaſion ſomething improper; or either too much or too little of what might not, in itſelf, be improper, to be done or given previouſly to, or after, the Infuſion; on the Invaſion, or in the Progreſs, of the Diſeaſe. Neither ſhould we omit, that the very great Succeſs of Ino-

 culation

* On this Occaſion we may juſtly refer to many of the Inſtances mentioned by Dr. *Cantwell*, in his *Diſſertation ſur Inoculation*.

culation has probably conduced to ſome of its Miſcarriages; by encouraging the raſh and ignorant often to enterprize it, and the inconſiderate too frequently to permit them.

From ſuch Reflexions I concluded a uſeful *Analyſis of Inoculation* ſhould comprize a further Analyſis of the Cauſes and Diſpoſition of the Small Pocks, in order to the ſafeſt Practice of the Method that imparts it. Such Diſquiſitions then (chiefly contained in the three firſt Sections) being converſant about ſome of the moſt active, tho' imperceptible, Parts of Matter; and about their Operation upon others throughout our fluid, our vaſcular and nervous Syſtem (ſo untraceable in a living State) were of Courſe referred to the Candour and Conſideration of the Author's Superiors and Equals in * medical Knowledge and Literature, to whom they muſt be obviouſly intelligible; ſince it is certain they have been ſo to Gentlemen not Phyſicians, of good natural Diſcernment and general Erudition. But for ſuch Practitioners, or other Retainers to Medicine, as may be leſs diſpoſed to, or leſs qualified for, phyſiological Diſquiſitions, it is hoped, the Facts and Evidence with Regard to Inoculation; the Deſcription of the Operation itſelf; the moſt appoſite Preparation of different Bodies for it; the Treatment of the enſuing Diſeaſe; and briefly every Circumſtance and Precaution relating to the Practice

* This appears from p. 32, 75, and many other Paſſages of the Treatiſe; and was obvious to the learned Mr. CHAIS at the *Hague*, who in his Letter to Dr. SWENCKE, profeſſedly on the *Analyſis*, ſays, — *Au milieu de Quantitè d' Obſervations faites pour les maîtres de l'Art, et que Perſonne ne ſera mieux en Etat d' apprecier que Vous* — *Eſſai Apologetique*, p. 202, 203, *i. e.* Among many Obſervations intended for the Maſters of this Art, and which no Perſon is better qualified than yourſelf to judge properly of.

tice are ſo clear and preceptive, that "he who runs may read."

Nevertheleſs, it having been objected to the former Edition of this Treatiſe, that the Terms of Art, and ſeveral leſs common Words frequently occurring in it, made it hard to be underſtood by a great Number of Readers, who might be intereſted in the Subject; as many of the Terms of Art and merely medical Words, as could be omitted without much Circumlocution (which in the plaineſt, humbleſt Language might ſometimes prove full as obſcure as the Terms themſelves) are here exchanged for more familiar ones: while ſuch as could not be avoided on this Subject are briefly explained in a ſhort Gloſſary. On Occaſion of the like Objection to Dr. ARBUTHNOT's *Eſſay of Aliments*, &c. that learned and ingenious Phyſician, in a following Edition of it, printed the plaineſt *Engliſh* Words he could find to correſpond moſt exactly to ſuch Terms, at the Bottom of thoſe Pages in which they occurred. By this Means indeed the Reader ſaw the Explanation and Connexion of the Term at the ſame Time with leſs Trouble; tho' in a few Inſtances it occaſioned the ſame Explanation to be repeated in another Page: beſides which, that Method would have interfered too often, in this Book, with the other References and Notes.

Some other Words, which are not Terms of Art, and which muſt be well known to all who are well acquainted with their own Language (no very gegeneral Caſe indeed) I have alſo exchanged for others more common and popular: and ſuch ſometimes I confeſs, as have expreſſed my own Ideas leſs preciſely and ſatisfactorily to myſelf. Hence I imagine they may often appear leſs eligible to thoſe Readers, who thoroughly penetrate every Work they think worth

peruſing

peruſing; who can enviſage the Notions of a Writer exactly in the Light and Attitude in which he conceived and intended them; and who muſt find themſelves beſt entertained by the moſt ſignificant and preciſe Expreſſion of them. Perſons of this juſt, tho' delicate Taſte, will very generally conſider Literature and its Embelliſhments, as decent and proper, tho' perhaps not as conſtantly indiſpenſable, Attendants on Science; and can never prefer utter *Vulgariſm* in Writing to ſuch Elegance, as may be equally perſpicuous to every Reader of a moderate Education and Apprehenſion; on which Suppoſition it muſt prove more impreſſive and retainable. At the ſame Time, however, ſuch Gentlemen will probably be the readieſt to approve a Book's deſcending, on a generally intereſting Subject, to a more obvious Familiarity with humbler Comprehenſions; and will not conſider, as Dr. ARBUTHNOT ſaid on much the ſame Occaſion, "an Indulgence to others as an Indignity to themſelves." For in this Reſpect perhaps I have rather done too much than too little; though I did not intend a very exact and critical Explication of any Terms or Words, nor to conſider them in all their Extent and Variety of Signification; but have endeavoured to give the moſt plain and familiar Explanation of them, in that Senſe in which I have commonly uſed them.

But having added ſuch an Explanation, and made ſuch Alterations (whatever Amendments they may be thought) in Deference to ſuch Objections, I may be allowed perhaps to obſerve, that I could have no ungenerous Motives for having expoſed my Performance to them. It was addreſſed, as I have ſaid, and eſpecially all its theoretic Part, to the Faculty; to no adequate Member of which it could be unintelligible, or even difficult. That relative Obſcu-

rity

rity which it might have, in Reſpect to the Education and Capacity of ſeveral Readers, clearly proves it was not calculated to * inveigle away any Phyſician's Patients, his Chattles, as MOLIERE calls them; nor ſpread forth and projected to incloſe Sholes, of whatever Age and Dimenſions, for my own inoculating. With perfect Conviction of the great Utility, the religious and moral Lawfulneſs of this Practice, I have never poſted about urging or enforcing the Application of it upon any Individual. I have left its own Events to ſpeak for it; and having publickly teſtified my Opinion on the Matter, I have conſtantly ſubmitted it to Perſons of common Diſcretion to chuſe, or reject it, for themſelves or their Families. For having only the greateſt moral or phyſical Probability, but no *infallible Aſſurance*, of its good Conſequence in the moſt favourable Subject, I ſhould have experienced more Unhappineſs from the Miſcarriage of one Patient whom I had *ſolicited* into Inoculation, than the Advantages from recovering ſome Hundreds could have counterbalanced, in my Way of eſtimating Things; which perhaps may be ſingular ſometimes, but I really think in this Reſpect is not affected.

This relative Obſcurity will alſo intimate I could be content, as *Horace* ſays, with a few Readers; and having directed the Work principally to ſuch as were the moſt capable Judges of it, I was not over-anxious in conſidering, whether they were likely to be ſuch thoroughly diſintereſted ones, as to make the moſt juſt and impartial Report of it. This Report,

* This was evident from p. 185, 186, 238, 239, 245, 266 of the firſt Edition, to which correſpond p. 237, 303, 304, 313, 344 of this; and it is very clearly inferable from many other Paſſages in both. See alſo p. 219, 220, 286, 323, 332 of the preſent.

port, among ourſelves, has probably been as various as their various Taſte, their different Abilities and Candour. The Terms of Art (nor is there Science, Art, or even Trade without them) and other derived Words, from whatever Language, beſides a few Latiniſms perhaps, could be no real Objections with them. Theſe compoſe the Dialect, as it were, of the Science; the Writer conceived it ſuitable to the Subject; reſpectable to the Dignity and Elegance of the Profeſſion, and of ſuch Readers. To ſuch alſo the Author might naturally be deſirous of appearing decently qualified for the honeſt Exerciſe of an Employment highly liberal and benign in itſelf; whatever Reaſon there might formerly have been given for the ſevere Cenſures of the Phyſicians in antient *Rome*, which Dr. *Cockburn* aſcribes to the good * Emperor *Aurelius Antoninus*; and for the ingenuous SYDENHAM's much later † Complaint of the illiberal and even malignant Conduct of Perſons of the Profeſſion. This diſingenuous Spirit however I imagine, upon the whole, is now very conſiderably abated, through the real Virtue and Honour of many ingenious, candid and learned Phyſicians both here and abroad: notwithſtanding there are, and perhaps will always be, here and every where, ſome deteſtable Remains of it, from the

* After a pretty general, tho' ſomewhat curſory, Peruſal of *Gataker*'s Edition, I have not diſcovered the Paſſage in which Dr. *Cockburn* makes this great and good Prince cenſure the Phyſicians at *Rome*, "as lying, back-biting, covetous Perſons." And as this is not much in the Spirit and Character of *Antoninus*, he ſhould have referred to the Book and Section.

†—ejuſdem artis profeſſores calumniandi anſam inde cupidè adripiant, atque coram iniquis judicibus cauſſam dicentes, ſeveriſſimam ſententiam facilé eliciant; eo ſcilicet conſilio ut ipſi pluris aeſtimentur, et ſuper aliorum ruinis viam ſibi ſternant ad famam; id quod viris literatis indignum prorſus eſt, immo et vilioribus Artificibus, modò probitatem colant. P. 147.

the too general Depravity of our Nature: one Inſtance of which I have imagined myſelf too much affected by, to avoid recollecting it.

In the Year 1746 I publiſhed an Anſwer (by Way of Letter) partly ſerious, partly ludicrous, to a Pamphlet levelled againſt Inoculation by a late Fellow of the College, and intitled, *Several Caſes in Phyſick, &c.* to which Anſwer there was no Reply. I heard ſoon after, this Performance had affected that Gentleman's Practice, which I did not imagine would have been the Caſe, as he had been long eſtabliſhed: I did not intend it, having never received the leaſt Offence from him, and not having the leaſt felonious Deſign upon it myſelf. I judged nevertheleſs it might be of public Uſe to expoſe his weak Reflections againſt Inoculation; and I thought it but ingenuous and honourable, by the way, to remove a little Dirt, with which he had endeavoured to beſpatter the late very worthy and celebrated Dr. MEAD, and the learned Dr. JURIN, who has deſerved ſo well of his Species on this important Practice. This Anſwer had very ſpeedily a ſecond Edition, and might have gone further, if I had been one of the moſt active induſtrious Authors. It was natural to expect the Gentlemen I had (tho' only officiouſly) defended, and who were too well engaged otherwiſe to have done it themſelves, would politely acknowlege my good Intention. They did, and honoured me with their Friendſhip, eſpecially Dr. MEAD. But the Approbation of that Pamphlet, ſince I am drove to this Retroſpection of it, did not reſt here. Several Gentlemen of different Arrangements in Medicine complimented me with their perſonal Civilities, and ſome even with Favours. Now it is certain that many of the very ſame Terms of Art, and many other Words both from the *Greek* and *Latin*, which have

been condemned in the *Analyſis*, had alſo been uſed in that Pamphlet, beſides a ludicrous Letter entirely *Latin*, annexed to its ſecond Edition. Yet there was not the leaſt Objection to any of theſe; nor even to many irregular burleſque Words which I had coined and uttered in it; the Reaſons of which ſeem very obvious. That Phyſician, to whom my Letter was humourouſly addreſſed, from his long ſtanding and many Connexions, might have his Proportion of Buſineſs. This Pamphlet, being thought to have expoſed him conſiderably, had a manifeſt Tendency to leſſen it. His Loſs muſt have proved Gain to ſome other Practitioner or Practitioners; to ſay but little of the Gratification that Gentleman's Enemies, which he was not without, might receive from his being diſcredited. Beſides, the real Author of this Anſwer did not appear, as I had only prefixed that Phyſician's Name tranſpoſed, to this Anſwer to the *Several Caſes, &c.*: So that no new Competitor preſented for any Share of the Advantages, which others might divide, by this Conteſt. But, on the other Hand, the *Analyſis* might naturally be thought intended to introduce a Candidate for the publick Favour in one Diſeaſe, or in one Method of it, at leaſt; and a Method which both Surgery and Pharmacy in *London* were endeavouring to monopolize, excluſive of Phyſick and of each other, though it has not fully ſucceeded. It ſeemed then a Point as intereſting here, to keep a new Pretender out, as it had been to pull an old Poſſeſſor down. The common Readers of the Book, ſuppoſing them neither very diſcerning nor ſcholaſtic, might certainly meet with more in it than they underſtood; and hence were obliged to receive the Character of it from Phyſicians, Surgeons, or Apothecaries of their Acquaintance: and what this Character was like to be is very obvious; except ſuch

Acquain-

Acquaintance proved to be Gentlemen of ſome Erudition, and uncommon Candour.

This appears to myſelf no unfair State of the Reaſons for the different Reception of that Pamphlet, and of this Work, in our medical Republick, in which I include the Profeſſions of Surgery and Pharmacy. However it is clear I have ſubmitted to ſome Blame in Reſpect of this Work, by the Addition and the Alterations I have made in this Edition of it. This Blame nevertheleſs I may very naturally have incurred, in part, from my miſtaking (not under-rating) the Education and Capacity of ſome Readers, and the Ingenuouſneſs of others. It affords me at the ſame time conſiderable Satisfaction to reflect, that notwithſtanding my own Faults in Language and Expreſſion, and the *Fineſſe* of ſome Individuals, the Publick have been ſo indulgent to my Endeavours on this Subject, as to require the preſent Republication.

Thus much may ſuffice for ſuch of my benevolent Readers, as might encounter many Difficulties in that Edition of my Book, which I hope they will find conſiderably leſſened in this. To have ſunk my Expreſſion much lower than I now think it, would have been making them but an indifferent Compliment, and loading myſelf with many Difficulties; when declining Age has wholly obliterated all Remembrance of the Dialect of my Grandames and Nurſes: to ſay very little of ſuch Incapacities, as the plaineſt and humbleſt Writer cannot ſufficiently deſcend into. But with Regard to thoſe Readers who thoroughly underſtood that Treatiſe; or, from the Pretenſions they formed to Phyſick, &c. ought to have underſtood it, and yet encouraged and increaſed the Complaints of its being harſh and unintelligible, I ſhall continue this *Eclairciſement* a little further, by

obſerving, that with Regard to Language in general, I do not recollect, that in any ſerious Manner of Writing (all Burleſque Words being wholly out of the Queſtion) I have conſidered myſelf of ſufficient Authority for the frequent coining of new Words, or for innovating the Signification of eſtabliſhed ones: inſomuch that I doubt if I had uſed throughout the *Analyſis* any Terms or Words, that may not be found in the beſt, the lateſt, Engliſh Dictionary. I have heard however of ſome Wags who threatened to tranſlate it into *Engliſh*: and I have met with a few Gentlemen, not without Merit, and neither ignorant of Words nor Things, whoſe delicate Ears have been mighty eaſily diſguſted at the ſlighteſt Offence againſt what they may ſuppoſe, the *pure Simplicity* of our Language. One of this Caſt ſneered me with his complimentary Wiſhes of *accumulated Honour*, in Deriſion of the Words *accumulated Gratitude*, which I had uſed in the former Dedication: neither could he digeſt the Word *Elucidation*, which had unfortunately eſcaped in ſome Propoſals to the Publick. Now if the *Latin* Derivation of this gave him Chagrin, would *Illuſtration* or *Explanation* have hurt him leſs? It happens that the following Words and Phraſes, *common Senſe* — *plain Diſcourſe* — *familiar Expreſſion* — *humble Style* — *real Honour* — *deteſtable Deceit* — *conſtant Labour* — *moderate Exerciſe*, and a few thouſand more *equally current* and *obvious*, are from the ſame Source too; and how ſhall we get rid of them? O! but *long Uſe*, they may *reply*, and *innumerable Precedents* have *naturalized* and *eſtabliſhed* thoſe, and theſe too, in which we are *obliged*, or even *compelled* to *mention* them. This neceſſarily reduces us to the ſame *Criterion* or Standard of the Validity of Words, *viz.* Time and Date, by which many of the *Romans* in *Horace*'s Days eſtimated the Value of Writers

Writers themſelves, the Dealers in Words. Suppoſe this Term then, with him, to conſiſt of a hundred Years; ſhall a Month leſs, as he ſays, or even a Year leſs, diſcredit them? No, they reply, a Writer of that Date may paſs very well. Thus by obtaining other gradual Conceſſions, 'till he plucks the Horſes Tail bare, he dextrouſly expoſes the Abſurdity of thoſe who eſtimate Writers, which we apply here to Words, merely by their Date and Antiquity;

———————*qui virtutem aeſtimat annis,*
Miraturque nihil niſi quod Libitina ſacravit.

This capricious Criticiſm will appear ſtill further abſurd, if we reflect, that all thoſe derived Words, which are become ſo authentic now, had alſo their Birth, their Novelty here, in ſome former Period; when, as the ſame Characters have probably exiſted for a few thouſand Years, ſome among our Anceſtors had the like Qualms about ſuch of them, as now appear the ſimpleſt, and the moſt indiſpenſable to us. Indeed as there ſeem ſome * fugitive and *obſoleſcent* Parts, as it were (if I may be allowed that Word) in the Nature of a living Language, and eſpecially in that of a literary and commercial Nation, it would be truly inconvenient if we had not an equal Quantity of ſucceſſive and ſupplemental Expreſſion; though doubtleſs all that many Men think and know may be comprized within a few Words; if that could be a ſufficient Reaſon for confining the reſt to the very ſame, and to the ſame Number too. Moderate Reflection in ſhort will make it evident, that the Increaſe of Knowlege muſt be accompanied with that of Language, its Vehicle: nor could all the Severity of

* — Cadentque Quae nunc ſunt in honore vocabula. HOR.
Αἱ παλαι ξωηθεῖς λεξεις γλωσσηματα νυν. M. AUR. ANTON.

of the antient *Romans* againſt the Introduction of new Words have prevented their coining or importing many, if it had continued a living Language until our later philoſophical Acquiſitions, and Improvements in various Arts; ſuppoſing their Deſcendants alſo to attain the Knowlege of them.

It may be hinted here by the Way, that ſuch learned Readers, as are habitually apt to impute Obſcurity to a Book, ſhould be pretty certain, previous to their Imputation, that they thoroughly comprehend the Senſe; or, if that ſhould be ſcarce, the mere Aim, and keep Pace with the Conception, of its Author; without which Equality the plaineſt Language imaginable will appear obſcure to them: for until his Ideas, or Meanings, are diſcovered, it will be impoſſible to judge of the Fitneſs or Impropriety of his Expreſſions. And it may be fairly apprehended, that ſome Readers are much readier to ſuppoſe a groſs Obſcurity in any Writer, than to admit the leaſt Shallowneſs of Diſcernment in themſelves. That *abſolute* Obſcurity, which a Reader of Penetration and Candour may conſiſtently cenſure, muſt ariſe from an Author's writing without clear, explicite Ideas; in Conſequence of which his Expreſſion will be cloudy and confuſed, be his Words ever ſo plain and ſimple, his Style ever ſo humble and inelegant. As the Axiom ſays, "No Man can give what he has not," and if an Author writes, he knows not what, it may well appear to his Readers, they know not how. But where this crude Manner of thinking is not an Author's Caſe, ſuch Readers ought to ſurmize, that the ſeeming Obſcurity might poſſibly depend upon an indifferent Apprehenſion at home. This indeed it may not be in their Power entirely to remedy; though they may be able to moderate, if not wholly to extinguiſh, that Envy or Ill-will,

Ill-will, which often creates an imaginary Obſcurity; provided they will only deal by others, as they would gladly be dealt by. Upon the whole however of this Simplicity of Writing, which may have its frequent Place, its Uſe and Beauty too, it would be ſtill more eſtimable, more amiable, if we could realize this Simplicity into Action, by conquering all Duplicity both of Heart and Speech; and by avoiding all Artifice in our Conduct and Commerce with Mankind, which ſeems reconcileable with as much of Induſtry as is truly laudable, and indeed virtuous.

Had all the Cenſures of this Work however been confined to the Dreſs and Style of it; or had they only proceeded from ſuch as had never propoſed any Friendſhip for, nor entered into any Intimacy with, the Author; one who was not exceſſively vain nor vindictive, might have contented himſelf to have reformed the Errors complained of, with leſs Remonſtrance about them. Writers, of all Men perhaps, may be particularly apt to over-rate themſelves; and where one of them profeſſes to inſtruct too, he is almoſt unavoidably ſuppoſed to aſſume a certain Importance of Character, that is apt to diſguſt his Readers of the ſame Profeſſion, and of ſimilar Pretenſions on his Subject; whoſe Reſentments, tho' ſpringing from the ſame Paſſion, may yet have a Tendency to repreſs the vicious Swelling and Self-worſhip of an Author. Partly with ſuch a View I have endeavoured to apply their Aſſiſtance to myſelf, as not wholly inſenſible of my Proportion of this great and common Infirmity: having alſo publickly, tho' in vain,* invited their ſtricteſt Scrutiny into

* For my own Particular, I wiſh not to preclude any phyſical Writers' farther Sentiments on this Subject againſt mine, or my Writings.

into the Subſtance, the Matter as well as the Manner, of the *Analyſis*; that it might either be reformed in Conſequence of their Strictures and my own Conviction, or be eſtabliſhed by my Anſwer to them.

But particular Detraction may be ſo circumſtanced, as to make a deeper Impreſſion. A Gentleman, with whom nine Sections out of eleven of the former Book were left in Writing, before they were committed to the Preſs, had expreſsly aſſured the Author, "he thought it was impoſſible to amend them;" adding, "he would not have them altered for any Perſon." Yet when the Book was publiſhed, and he was preſented with ſeveral of them bound, he adviſed another Gentleman of great Worth and Erudition, who had taken up one of them in his Study, and who could have met with nothing difficult in it, "to lay it aſide, for he would not like it." This, ſtrange as it may appear, is a certain Fact, having left the MS. with him, and given him the Books myſelf; and having been informed of this Character he gave of the Book to that Gentleman, by a Perſon of a very fair and good Character, who was preſent at the Time, and on the Spot, when and where theſe Words were ſpoke. Such a Fact requires not the leaſt Reflection, nor Comment.

Writings concerning it: but ſincerely invite the moſt capable Detractor from the *Analyſis of Inoculation* (tho' I have heard no very eminent or learned Phyſician ſuggeſted as ſuch) to analyſe both the Matter and Manner of it, with the juſteſt Severity, his Self-regard will allow him to prefix his Name to: ſince he may aſſure himſelf, if his Objections and Reflections are important, or even ſpecious, and GOD continues my Health and Faculties, he ſhall be repayed with an Acknowlegement of my Errors, or a Refutation of his own; in either of which Events many others may be ſtill more importantly intereſted than ourſelves. ——— Anſwer to the Rev. Mr. DELAFAYE, Evening Advertiſer *December* 12, 1754.

Comment. Some few Years however having intervened ſince the ungenerous Occurrence, I can truly ſay I have forgiven it, tho' I could not eaſily diſpenſe with mentioning it; as it has even obliged me with the moſt juſtifiable Reaſons for annexing the Judgment of ſome learned and generous Foreigners, concerning this Work, on its firſt Appearance.

COUNT TESSIN, lately Preceptor to the Prince Royal of *Sweden*, whoſe Name and Function ſufficiently characterize him, in his Letter on Inoculation to the Prince ſays,* — "There is indeed leſs Reaſon for me to extend this Matter, as there are ſeveral excellent Treatiſes publiſhed upon the Subject; particularly, the *Analyſis of Inoculation* by Dr. *J. Kirkpatrick*." What the truly ſagacious and experienced Dr. SENAC moſt obligingly ſays of the Work, chiefly regards the good Intention, the conſiderable Labour, of it: and the learned Reader is left to make what Deduction he thinks proper from the Compliment here † referred to, on Account of the great Politeneſs both of the Perſon, and of the Place. Dr. WERLHOF, Phyſician to his late Majeſty, and, if living, probably to his preſent Majeſty as Elector, in his Letter of *May* 18, 1754, from *Hanover*, ſays, ‡ "You have in ſo candid, ſolid, and learned a Manner, and from the plentiful Fountain of genuine

* *Letters from an old Man to a young Prince*, Vol. III. p. 137, 138.

† ——— Ad tuum librum confugi. Eximius profecto eſt labor hic, nec unquam e poſterorum memoria ælabi poſſunt tot inſignes conatus, ad peſtem, quæ humano generi inſita eſt, amoliendam: non incerta videntur tua præcepta, certiora tamen erunt cum ea addideris quæ longior docuit, aut docebit, uſus. *Epiſt. MS.*

‡ Candidè, ſolidè, eruditè, et ex genuinæ experientiæ uberrimis fontibus, doctrinam de variolarum inſitione ita nobis propinaſti, ut vix ac ne vix quidem addi aliquid poſſe aut debere videatur: ita penitus riteque omnia expoſuiſti, demonſtraſti, limitaſti.

Experience, ſo fully diſcuſſed the Doctrine of Inoculation, that it ſeems as if very little was omitted in, or ought to be added to, it; ſo thoroughly and rightly have you diſplayed, demonſtrated and limited the Practice." The Rev. Mr. CHAIS of the *Hague*, at the End of his excellent Apology for the Practice of Inoculation, in a religious and moral View, has addreſſed a Letter to the learned Dr. SWENCKE, an eminent Phyſician there, profeſſedly on the *Analyſis*, *&c.* and on my worthy Friend Dr. MATY's Account of it in his *Journal Britannique*: in which Letter, among many very favourable Demonſtrations of his great Candour to that Treatiſe, he ſays, * " Without Doubt it cannot fail of being tranſlated into all the Languages of *Europe*;" adding in another Place † " that when the Author is talking of the Improbability of transfuſing any accidental Diſeaſes of the Perſon inoculated from, to the Perſon inoculated, he ſpeaks, as if he had in ſome Degree ſurprized Nature herſelf in ſome of her ſecret Operations." The ingenious Compiler and Abridger of ſeveral Pieces on Inoculation ſays, of the *Analyſis*. ‡ " That of all the Works on this Subject, this is the moſt extenſive, compleat and modern; and that it contains ſo much Matter, and ſo many curious and uſeful Obſervations, that his Readers muſt not be ſurprized, if the Extracts ſhould be

* Sans doute qu' un Livre dont le Sujet eſt ſi important —— ne manquera pas d' être traduit dans toutes les Langues de l' Europe. *Eſſai Apologetique*, p. 103.

† Quant aux Maladies accidentelles, nôtre Auteur en parle un peu comme s'il avoit pris la Nature ſur le Fait. Id p. 117.

‡ De tous ces Ouvrages, le plus étendu, le plus complet, et le plus recent eſt celui dont on va donner un précis. Il contient tant de matière, tant d' obſervations curieuſes et utiles, qu' on ne doit pas s'etonner, ſi nôtre Extrait eſt de quelque Prolixitè. —— *Recueil de Pièces concernant l' Inoculation a* Paris, 1756, p. 237.

be prolix." When this Gentleman comes to abſtract the Section on Preparation, he ſays,‡ "To give all the good Directions it contains, would oblige him to tranſlate the whole Section." Except the *Swediſh* of COUNT TESSIN, tranſlated by an ingenious Gentleman of Character here, I have referred to the expreſs Words in the different Languages, in which theſe Teſtimonies were written, and given them here in *Engliſh*, that none might complain of their not being genuine, or *intelligible*. Beſides the generous Partiality of this Gentleman and Mr. CHAIS to that Treatiſe, I might refer to the learned and truly rational Mr. LA CONDAMINE'S frequent Citations, to Dr. BUTINI'S Letter to Dr. MATY, and to myſelf, on Occaſion of it; to this laſt ingenious and friendly Gentleman's former Account of it as a Journaliſt; to Dr. SHUTZ'S frequent Citations from it, and to a few *Engliſh* Pamphlets, beſides ſome Letters to myſelf. But I am ſo thoroughly apprized of the great Decency of ſome Temperance on this Occaſion; that I muſt hold myſelf obliged to all who have furniſhed me, from whatever Intention, with the beſt Apology imaginable for my having produced this Abſtract of the Approbation of ſuch learned and worthy Writers, as have done me great Honour, and afforded me a very natural Satisfaction; eſpecially as I have not obſerved throughout the whole of theſe Commendations, or Compliments, at large, the remoteſt Hint of any Obſcurity in the Work.

One Reaſon of this I conceive to be, that excepting a few foreign Gentlemen in Commerce with us,

‡ Il faudroit traduire cette Section entiere pour faire entendre les Avis utiles qu' elle contient. *Ibid.* p. 265. A learned Friend here informs me the Author of this *Recueil*, is Mr. MONTUCLA, Member of the Royal Academy of *Berlin*, and Author of a late excellent Hiſtory of the Mathematics.

who attain our Language on that Account, they are generally Foreigners of Condition and Literature, who do us the Honour of cultivating it as a Kind of learned Language, and as the Means of reading the beſt Books of Science, of Erudition and Entertainment, which are wrote in it. This I ſhould imagine to be a conſiderable Motive for our endeavouring, not only to excell in the intrinſic Merit of our Productions in the two firſt Reſpects; and for our preſerving the juſteſt Regard to Virtue and Delicacy in the laſt; but that it ſhould alſo excite us to ſuch an Elegance, Force and Significance of Expreſſion, as may be beſt adapted to the Subject and Purpoſe of each Piece. Hence as many of our different Books as may be tranſlated into French or other Languages, will make the better Appearance in them, to the Honour of the Engliſh Genius: and Language, we may be certain, is not conſidered as of little Importance among our (now hoſtile) Neighbours; who had long ſince, under the Auſpices of a very politic Miniſter, formed a Body of ingenious and learned *Frenchmen*, principally for the Cultivation of their own. This has certainly facilitated both their commercial and political Intercourſe with other Nations; as they have had the Addreſs to make it the moſt general Medium of *Europe*, both in Converſation and Correſpondence, between ſuch as are Strangers to each other's native Speech; and even the Language of moſt Courts in *Chriſtendom*.

But this profeſſed Dread of Innovation is not reſtrained to Style or Language; being alſo extended to any further Progreſs or Diſcovery in Science. We know that HARVEY's Doctrine of the Circulation was vehemently oppoſed by *Riolan* and others. Some Pigmies, tho' ſcarcely audible, have whiſtled againſt

againſt Sir ISAAC's Philoſophy: and we have ſeen People ſneer at the Uſe of Ventilators, with very little indeed of the moſt ingenious Dr. HALE's Phyſiology, and not a Ray, a Spark, of his Philanthropy. A nameleſs Engliſh Writer ſome Years paſt recommended, in expreſs Terms, this *Advancing backwards*, as the *Hibernian Exerciſe* terms it, in medical Education at leaſt; "deploring the Vanity of ſuch, as cannot be ſatisfied with having wrote a plain practical Treatiſe, without ſhewing Knowlege in Philoſophy, and Excellency of Genius," *Pharmacopolæ* juſtificati* P. 13. Now indeed if a Phyſician may be thoroughly qualified without any Philoſophy, of which Phyſiology makes a large Branch, and without any Genius, there will be very little Difficulty in writing, if he can write legibly [his Printer may ſpell for him] without making the leaſt Oſtentation of what he does not poſſeſs. But ſuppoſing Phyſicians to have Phyſiology and Genius, ſince many certainly have had, and many now have them; is it really neceſſary they ſhould bury their Talents, and ſuppreſs their Attainments, as medical Reaſoners and Writers, (which it may ſometimes be their Duty not to (a) ſuppreſs) leſt they ſhould be judged unqualified to preſcribe as Practitioners! A *Latin* Axiom affirms (b) 'that where the Philoſopher terminates, the Phyſician com-

* Perhaps this Author choſe this *juſtificati* in his Title-Page, to manifeſt his Contempt of pure claſſical Latin. He might have proved this doubly by premiſing *regenerati* to it; which perhaps a few may ſuppoſe previouſly neceſſary to the Juſtification of ſome of the Craft. This however cannot affect truly honeſt and ſenſible Men of the Profeſſion, whoſe Experience may be often greatly beneficial.

(a) Sic enim decet Inveſtigatorem veri non ſolùm quæ legerit, ſed et quæ ſecum ipſe meditando conſiderat et contemplatur, uſuque tenet cognitione digniſſima, in communem fructum proferre. FERNELIUS Prefat. ad Lib. iv. de Febribus Edit. Lugd. Bat. 1645.

(b) Ubi definit Philoſophus, incipit Medicus.

commences,' which ſuppoſes the latter to have been previouſly a complete Philoſopher. But our Pharmacopoliſt's Syſtem, thoroughly inverting this Axiom, inſiſts on the negative Qualification of *no Philoſophy*, as indiſpenſable to *his Way* of *mixing* or *making up* a genuine Doctor, with which it may not incorporate perhaps.

This Author further ſuppoſes the Knowlege of no Language, except his Mother Tongue, neceſſary for a Phyſician: no more Anatomy, than what an Acquaintance with the Bowels, and one ſmall anatomical Treatiſe, with the occaſional Conſultation of a few dead Dogs, may afford him. He requires much the ſame Degree of Knowlege in his Phyſician, of what Phyſicians themſelves have thought the other neceſſary Prerequiſites to a juſt Notion of Diſeaſes, and of the happieſt Methods of treating them. He has a very bad Opinion of all medical Theory, without reflecting that *Theory* does not really ſignify any naked wild Suppoſition; but ſuch a thorough Contemplation or Conſideration of its Object, as may, in abſtruſe and difficult Caſes, afford the Intellect the moſt probable Repreſentation of ſuch Species, ſuch Motions and Operations, as elude the Inſpection of the Senſes. Hence an apt and even fertile Imagination, under the Direction of an excellent Judgment, appears to conſtitute the Genius of great Phyſicians: continual Inſtances of which happy Combination may be ſeen throughout HARVEY's excellent, learned, and moſt ingenious Treatiſe on the Generation of Animals. MARCUS ANTONINUS, mentioning the ſame moſt curious and abſtruſe Subject, ſays, "We (a) ſhould contemplate the Cauſe of this wonderful

(a) ταυτα δε τα εν τοιαυτη εσκαλυφει γιγνομενα θεωρειν, και την δυναμιν αυτης ὁραν, ως και την βριθουσαν, και την ανωφερειαν, ὁρωμεν, ουχι τοις ὀφθαλμοις, αλλ' ουχ ηττον εναργως. Lib. X. § 26.

derful Proceſs, however obſcure, as we do that of the centripetal and centrifugal Force; not indeed with our external Eyes [which cannot diſcover them] but with ſuch as are not leſs diſcerning." Thus inſeparably blending the conceiving and judging Faculties, which *Harvey* diſtinguiſhes, (b) "affirming the vegetative Faculty, to which he aſcribes the Formation of the Embryo in the Womb (and which he elſewhere ſuppoſes very (c) ſimilar to the Faculty of ideal Conception in the Brain) to be that, in which we reſemble the Deity ſtill more than in the rational one."

That a very good and uſeful Phyſician may be formed without this Luxuriance of mental Powers, this Extent of Contemplation, from a plain clear Underſtanding, cultivated by proper Education, and conſiderable Experience and Obſervation, is highly probable. Nevertheleſs, this occaſional Faculty of exploring even remote and abſtruſe Cauſes is deemed neceſſary by the moſt judicious *Celſus*, to the (d) conſummate Perfection of a Phyſician. Our nameleſs Author however is of a very different Opinion, and heartily joins that numerous Group of Moderns, who

(b) Neceſſe eſt fateamur, in generatione hominis, cauſam efficientem ipſo homine ſuperiorem et præſtantionem dari: vel facultatem vegetativam, ſive eam animæ partem quæ hominem fabricat et conſervat, multo excellentiorem et diviniorem eſſe, magiique ſimilitudinem Dei referre quam partem ejus rationalem P. 293. See alſo *Anal.* p. 16 to 19 and Notes **.

(c) Supereſt ut ad merum *conceptum*, ſpecierumque ſine materia receptionem confugiamus; ut idem ſcilicet hìc contingat, quod in cerebro fieri nemo dubitat. 561

(d) Eum verò rectè curaturum, quem prima origo cauſæ non fefellerit P. 5 — Itaque iſta quoque naturæ rerum contemplatio, quamvis non faciat medicum, aptiorem tamen medicinæ reddit. Profecto veriſimile eſt et Hippocratem et Eraſiſtratum et quicunque alii, non contenti febres et ulcera agitare, rerum quoque naturam ex aliqua parte ſcrutati ſunt, non ideo quidem medicos fuiſſe, verum ideo quoque majores medicos extitiſſe. Ratione verò opus eſt medicinæ ſi non ſemper inter obſcuras cauſas, neque inter naturales actiones, tamen ſæpe. p. 13.

who ridicule all Theory; which this very *Celſus*, a Man of great Capacity and extenſive Erudition, a moſt elegant Writer, and probably the beſt Surgeon of his Time, judged to be highly eſtimable: and for theſe plain Reaſons indeed, becauſe he knew what it meant; he could diſcern a true from a falſe one; and foreſaw, in ſome Degree, the great Lights that muſt reſult from ſuch a Habit of thinking and Diſquiſition. On the contrary our modern Anti-theoriſts very willingly forget that Theory, or even meer *Hypotheſis*, may have frequently ſuggeſted Experiment, and Experiment may have ſometimes eſtabliſhed Theory: without a Propenſity to which in Men of real Capacity, we had ſtill been deſtitute of many Diſcoveries and Improvements we poſſeſs. Had Inoculation, for Inſtance, been diſcovered by a Phyſician, as ſome may be ‡ inclined to think it, he muſt have deduced it from a Theory, founded on obſerving the different Effects of the ſame Cauſe, acting upon the Vitals or the leſs important Parts, and under different Circumſtances of the affected Subject. To diſcern the Errors of a ſpecious Theory is the Part of an excellent Phyſician, who cannot be ſuppoſed a bad Theoriſt, from his being ſuperior to an erroneous one. Beſides that even theſe very Errors, which indeed have bad Effects on weak Judgements, generally ſerve in the End to the Eſtabliſhment of ſome practical Truth: in which Reſpect they may be compared to the Rule of *Falſe* in Arithmetic, where from a ſubſtituted and wrong Number, there reſults a certain and ſatisfactory Solution. — But not to loſe Sight of this *juſtifying* Pharmacopoliſt, the whole of what he would inculcate is, that the general Education of the Apothecaries would be the beſt for Phyſicians too; and that the Contractedneſs of the former is the Standard of

‡ See p. 107.

of Perfection for the laſt. Theſe, to be accompliſhed and fortunate, ſhould renounce every Attainment thoſe have not, or could not, arrive at; or finally experience "the Increaſe of Knowlege to be the Increaſe of Sorrow only." Such Railers, like the Fox without a Tail, would perſuade us that every Talent or Faculty of which they are unpoſſeſſed, is prejudicial, or at beſt worthleſs in others: but endeavour to ſuppreſs the real Truth; which is, that *as many as excell them diſguſt them too.*

There appears one Obſtacle however to the compleat Execution of this extraordinary Project, which is, — that this modeſt *Criterion* for aſcertaining the Value of Doctors by negative Qualities and Quantities, in Proportion to their Inabilities and Non-attainments, muſt immediately diſqualify the moſt learned and reputable Fellows of the Faculty, the moſt eſteemed and moſt conſiderable Practitioners within the Bills. Now ſeveral Perſons of high Rank, and great Diſcernment, have certain ſtrong Prepoſſeſſions in Favour of ſuch Gentlemen: and poſſibly both the Univerſities might proteſt againſt the rigorous Execution of it. To this on the other Hand it may be anſwered, that what the Conſumers of Corn, the Multitude, loſe in Weight, they may gain in Tale or Number; whence the Majority will be better accommodated by reducing the Price of Health and Sickneſs, theſe *ſometimes* commutable Circumſtances: ſince by this compendious Method of Inſtitution, every advertizing Doctor, of whatever former Craft or Myſtery, patenteed and unpatenteed, Horſe and Foot, all indeed entitled, occaſionally, to the Benefit of their Clergy, muſt alſo be qualified for *Graduation*, as plainly as one of Dr. *Brooke's Rules* or *Squares*, and nearly in as ſhort a Term. Beſides, tho' it has been the Cuſtom of ſome Schools to attempt ſhaming the Dunces, by threatening to put them up into Taylors

or Chimney-Sweepers; it may prove more expedient for the Publick, on this Syſtem, to ſelect Lads of this ſolid Caſt, and to manufacture them into Doctors; as there can be no Apprehenſion of their puzzling their Patients with hard Words; nor miſtaking their Caſes, through the Influence of any Theory whatſoever. ——After all nevertheleſs, ſome Allowances muſt be made to the real Neceſſities of our common Nature; and many more will be pleaded for by the factitious Wants and Cravings of Men.

Thus having laughed away the utmoſt of my frail Reſentment, I ſhall detain my patient Readers little longer than to inform them, they will find this Edition conſiderably enlarged with ſome new Caſes (the greater Part within my own Knowlege) and with many further Reflections on the Subject, ſome of which may inform the leſs experienced; while others perhaps will only entertain the medically ſpeculative and curious. Had my Experience been ſtill more extenſive, the Publick had not been the poorer for it, as far as it might have furniſhed any thing truly new and valuable; except the Fatigue of collecting it had rendered me leſs able to communicate it in this Manner. One or two Circumſtances they may ſafely depend on; which are, my having credited every Perſon who permitted me, for the leaſt Information I have received on the Subject; and the ſtrict Truth of whatever I have affirmed, as of my own Knowlege. From ſome Conſciouſneſs of my great Deficience in moſt Virtues, I have long endeavoured to poſſeſs myſelf of that *Love of Truth*, which is the ſacred Root of many: tho' inſtead of obtaining the Fruit, I have generally only made a faint Approach towards ſuch Virtues, as border neareſt on my ruling Vice (for it can ſcarcely be termed a Paſſion) and made a Shift to avoid ſuch Vices (which may be eaſily avoided) as are remoteſt

moteſt from it. An Indolence, which I am willing to ſuppoſe very conſtitutional, being not my leaſt Vice, has effectually ſecured me from that which the Apoſtle emphatically terms *Idolatry*. This makes me extremely indulgent to my *Infirmity*, as I love to call it, eſpecially when I reflect, that I ſuffer it to hurt but one; and when I clearly diſcern that ſame Idolatry, to have been a powerful prediſpoſing Cauſe to a Majority of our Miſcarriages by Inoculation. Hence I have freely allowed myſelf in a general, not a perſonal, Cenſure of this raging Source of mortal Error in others, from a moral Certainty of never being affected by it myſelf.

If I ſhould aſcribe my Conduct in this Reſpect to my Reflections on the Diſparity, and very different Duration, of mental and palpable Riches (as the latter cannot *long* ſurvive the general Conflagration) I am apprehenſive I might too greatly indulge the Impulſes of my Vanity, and credit myſelf for too much. Wherefore, ſuppoſing no ſuch Reflections to influence me; whether it be owing to any Peculiarity in my olfactory Nerves, or to any Defect in my very Brain, the Fact is certain, — that the *Odor lucri*, the *Scent of Gain*, has never operated ſufficiently there, to rouſe me to any Effort that appeared oblique, intruſive, or ungenerous to me; nor indeed to many which ſeemed not ſuch, if attended with conſiderable Difficulty. I have ſometimes entertained myſelf with reflecting, what an Air of unfaſhionable Diſintereſtedneſs this Indolence may aſſume; and have often been whimſically comforted, when I heard a paſſing Bell, or read of a high-born Deceaſe, with the Certainty that I was guiltleſs on the Occaſion; and that I could defy the miſtaken Spectres, if they ſhould ſhake their Heads at me, truly to ſay, *I did it*. This Conſideration perhaps has attached me particularly to Inoculation, as the Conſequences of

this Practice excite ſo very few Apparitions to interfere with a Doctor's Slumbers: and I have ſtill ſome Qualms, after a Practice of near forty Years, both much and little, about the entire Innocence of very frequent, however legal, Homicide, (or perhaps only Chance-Medley) tho' occurring according to the ſtricteſt Rules and *Decorum* of Art. As I imagine I have diſcovered myſelf more adapted by Nature, which a Phyſician ought to follow, to think in Aid of others, than to buſtle conſiderably for one; and am at leaſt full as fond of the Science, as of the (a) Trade, I am ſecure from envying Gentlemen of ſuperior Acquiſitions by the Profeſſion, whom I can unaffectedly eſteem, when untainted with Illiberality and Inſolence; and truly love, when their Characters are truly amiable. Conſcious of certain grateful Feelings from theſe Approaches towards Candour (that elegant and conſummate Honeſty!) in my own Mind, I have ſometimes been diſpoſed to pity thoſe I have thought deſtitute of the like; which ſeems almoſt inevitably the Caſe of all the very greedy and graſping, the moſt ungodlike Character, except the Cruel, of which I can form any Idea.

Every rational humane Perſon will properly diſtinguiſh, at the ſame Time, what Conduct the Accidents of a large Family and the *res anguſta domi* will laudably ſuggeſt; in which Situation extraordinary In-

(a) Non ego tantam mihi credo eruditionem, ſagacitatem, vel experientiam, ut ſperem a ferme ignoto multos arceſſere ſuae ſalutis praeſidium: ut quererer aut inviderem, quod plurimis, meritiſſimò celebrioribus, conſervatio vitae, quae mortalibus (heu! parùm proſpicientibus) tanti videtur, prudentiſſimè conſiſa eſt. Deinde artes, aſſentatiunculas, et ſui venditationes, quibus nonnulli, diverſa prorſus indole, ſibi fautores aſciſcunt, forté nimiùm, contra quàm mos eſt, negleximus; ea quippe rati quae homini non improbiſſimo, non impudentiori, neque invido malé congruerent, neutiquam decuiſſe medicum. Nimio plus quàm vellem hinc forté vacat, &c. —— Praefat. ad POP. excerpt. quaedam, latinè reddita, Edita Londini, 1749.

Induſtry may reſult from Duty and Affection in the worthieſt Hearts. The continued Activity of ſuch as are warmed by the abſtracted Love of doing Good is entitled to the warmeſt Applauſe: and no inconſiderable Allowances ſhould be made to thoſe who are excited, from a fair Love of Knowlege and Reputation. But where none of theſe Circumſtances are in the Caſe, and ſuch Conduct ſprings from the muddieſt Source, in Perſons already of very affluent Circumſtances, it is ſcarcely excuſable. If theſe think of Virtue at all, they ſeem to conclude there is but one, which is Induſtry: and if they can avoid that one great Crime, Poverty, from which they think they can never get far enough, they have little or no Solicitude about any of their other Crimes; nor the leaſt Dread of the great Difficulties, which the divine Author of Chriſtianity affirms, Riches oppoſe to our Attainment of eternal Treaſure and Beatitude. We are all convinced of *Horace*'s ſound Underſtanding, in *rating* (a) *Silver lower than Gold*, and ratify it as current *ſolid Practice*. But if we except a few unfaſhionable Folks (and yet the moſt ſelect of theſe few happen to be in very high Life!) how univerſally do we diſſent from his Calculation, of *Gold's being leſs valuable than Virtue!* This is conſidered as *meer Theory*; and, partly for that Reaſon perhaps, ſo thoroughly diſreliſhed.

And now having, as one eſtabliſhed Perquiſite of an Author, appropriated my tedious Preface to entertain the Publick, chiefly concerning myſelf and my Appurtenances; to acknowlege ſome of my Obligations to my learned and candid Friends abroad; and to fortify this Edition againſt the *unprinted* Detractions from the laſt, by my *t'other Friends* at home; I hope the benevolent Reader will conclude my prefixing this partial Sketch of the

(a) Vilius argentum eſt auro, virtutibus aurum.

the Mind of an odd *Sexagenarian*, in none of its pleaſanteſt Attitudes, to be as pardonable a Vanity, as a flattering Portrait of an Author's Countenance introducing his Title Page. *J. K.*

POSTSCRIPT.

SINCE the whole of this Book, except the Preface, has been printed off, a young Nobleman of very high Rank has died of a violent Degree of the Small Pocks, after having been inoculated for it between eight and nine Years paſt. But having premiſed, that his Inciſions never inflamed, and of courſe never ſuppurated, cloſing very ſpeedily, we are warranted to add, that, "On the 16th Day from Inoculation he had a Fever and a few Pimples, which continued out for a few Days; the Slightneſs of the Eruption would not admit of any certain Judgment of its Nature or Species. Dr. MEAD, who then attended him, Mr. RANBY, who was called in to give his Opinion, and the Surgeon, who inoculated him, all were unanimous in declaring, that the Appearance was equivocal; and that, as the Infection had not produced the proper Effects upon his Arms, the preſent Illneſs and Eruption were not to be depended upon, and adviſed his Lordſhip's being inoculated again. This his moſt noble Parents had agreed to, and the Time of performing it was more than once nearly ſettled; however, from accidental Circumſtances it was poſtponed, and was not done after the firſt Time."

For this, the moſt authentic Account, that could be procured of this young Nobleman's Inoculation, I am, or indeed rather the Publick are, obliged to the careful Enquiries of a truly learned and worthy Phyſician, who attended him only in his laſt Sickneſs; and who being, out of his real Philanthrophy, a great Friend to the Practice of Inoculation, I received much Pleaſure from his thinking with me, that it was both juſt and important the Publick ſhould be informed of the true State of the Caſe. In ſuch a Situation then, and under ſuch Appearances, we imagine no competent Phyſician would pronounce a Patient exempted from variolous Infection. PYLARINI has affirmed the contrary. See P. 153, and Mr. *Motte*'s Caſe, P. 148. The Reports of Lady *Morris*' and Mr. *Scawens*' Miſcarriage, P. 151 N* (of which Facts however we have not as yet been particularly aſcertained) may leſſen our Regret for the Omiſſion of a repeated Inoculation in this Caſe. On the other Hand, the entire Innocence of a ſecond ineffectual Inoculation in Maſter *Hopkins*' Caſe, P. 154, may incline us to wiſh it had been repeated here, as his Lordſhip proved finally but too ſuſceptible of the Diſeaſe; and it is not the ſlighteſt Benefit of Inoculation, that in all Probability it generally betters

ters the Chance of the worſt Objects of this cruel Malady. Indeed were we capable of diſcovering the very few and ſingular Habits liable, *as we are told*, to a ſecond Small Pocks; ſince we have, *in Speculation*, ſuppoſed ſuch a Re-infection (in Deference to a particular Authority or two) not *wholly impoſſible*, P. 43; there would be no Inconſiſtence in ſuch a penetrating Phyſician's adviſing a ſecond Inoculation to ſuch a peculiar Habit, even after the firſt had been effectual. But as I never expect to arrive at this Sagacity myſelf, which I ſhould admire in another, the beſt Reaſon for Re-inoculation, as it may be called, will be ſuch a well-founded Doubt of the Efficacy of the firſt Operation, as happened in the preſent Caſe.

I have alſo been lately informed, by an eminent Surgeon, very converſant in this Practice, that two inoculated Children have very lately miſcarried; dying under the Convulſions preceding Eruption, which Convulſions continued even after the Appearance of ſome Eruptions. This truly is an unuſual Circumſtance. One of theſe Patients was ſeen by the Gentleman who informed me; and who was aſſured of the other ſimilar Fatality. Had theſe Caſes, and my Information of them, occurred ſooner, I might have inſerted them P. 233, at the End of thoſe Arguments, or Reflexions, which have occaſioned my Suffrage, in general, againſt the Inoculation of *very* young Children: though ſtill with a Reſerve to the Conditions and Proviſos recommended P. 236. I ſhall juſt add on this Occaſion, that in the *London Chronicle* from *September* 1 to 3, the Deaths of Children under two Years of Age amount to 198; which happens to be exactly the Number of all the other weekly Deaths in the ſame Bill, from upwards of two Years to ninety. This indeed is an uncommon Proportion, tho' they generally exceed the Deaths from two to fifty, and not very ſeldom to ſixty, incluſive. If this be added to the Obſervations and Reflexions, P. 231, *&c.* perhaps it will prevail on ſuch humane Practitioners, as may often be ſuperior to the *auri ſacra fames*, the frequently ſtupifying Contagion or Influence of Money, to become cautious of their own Reputations at leaſt; which may be conſtrued to imply ſome Conſideration of the great Fragility of the Lives of tender, innocent and amiable Infants. Indeed within the Bills, where ſuch may be continually expoſed to the natural Diſeaſe, ſome Plea may be alledged in Extenuation, at leaſt, of this Practice: but if the Faſhion ſhould continue, it may alſo extend to Places where natural Infection is not; and as it will doubtleſs prematurely cut off many ſuch Subjects, it may materially ſtrike at the Increaſe of the People. This, it ſhould ſeem, can never be worſe timed than after the conſiderable Loſs of them by War; and the Acquiſition of more Dominion to be inhabited, improved, and defended by them.

TITLES

N. B. Preface, p. xv l. 15. for *propoſed*, read *profeſſed*.

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Index.

OF

VARIOLOUS CONTAGION,

Or the external CAUSE of the

SMALL POCKS.

IT is much eaſier to deſcribe the viſible Effects of this Contagion, than to inveſtigate, with Certainty, the preciſe Time and Place of its earlieſt Appearance: For tho' we ſhall find it may be ſtrongly concluded to have been unknown to the antient *Greek* and *Latin* Phyſicians; ſuch a Concluſion cannot be ſuppoſed to prove, that it might not exiſt at, or before, their Time, among People with whom they might not have the leaſt Intercourſe, and who might be deſtitute of the very Elements of Literature to record it. Such a meer Suppoſition, indeed, is equally incapable of Proof or Refutation, from our very obſcure Notions of the Situation of different Nations on their earlier Emigrations, and their gradual Diffuſion over the Earth after the Deluge: but with Regard to the *Jews*, of whom

we have ſome hiſtorical Knowlege, tho' no antient medical Writings from them, we have not much leſs cogent Reaſons for ſuppoſing this Diſeaſe unknown to them under *Moſes*, or even after the Commencement of the Chriſtian *Æra*; ſince many other Diſeaſes incident to them, and particularly their great cuticular one, are frequently named in both the Teſtaments; and the learned Dr. MEAD has met with no Paſſage in either, that induces him to mention it in his Treatiſe *De morbis bibliis*; referring the Diſtemper of *Job*, which many of the Vulgar, eſpecially ſince Mr. MASSEY's Sermon againſt Inoculation, have ſuppoſed the Small Pocks, rather to an *Elephantiaſis*. *America*, which was moſt probably peopled from northern *Tartary*, has, with the greateſt Likelihood, been eſteemed wholly free from it, before its Introduction by the *Europeans*. Dr. FRIEND (1) conjectures it to have appeared firſt in *Egypt*, from *Rhazes'* mentioning one *Aaron*, who practiſed Phyſic at *Alexandria* in the Reign of *Mahumed*, A. C. 622, and who deſcribed the Symptoms, Kinds, and Cure of the Small Pocks. But we are informed by Dr. MEAD, (2) that REISKE, who was thoroughly ſkilled in *Arabic*, aſſures us, he found it affirmed in a Manuſcript in that Language at *Leyden*, that the Small Pocks and Meaſles firſt appeared in *Arabia*, the Year when *Mahumed* was born, *A. C.* 572,* which

(1) Oper. p. 330. (2) de Variol p. 3.

* Boulonvillars fixes his Birth on April the 9th 571.

which will ſufficiently conſiſt with *Aaron*'s writing on it fifty Years after.

In the Year 1735 a *Latin* Treatiſe was publiſhed at *Wratiſlaw* by the ingenious Dr. HAHN, intitled *Antiquitates Variolarum*, in which he affirms the antient *Greek* Phyſicians certainly knew the Small Pocks. This we have not ſeen, but find it anſwered the ſame Year, by another *Latin* Treatiſe, *de Variolis et Anthracibus*, printed at *Hanover*, and written by the learned Dr. WERLHOF, Phyſician to his Majeſty as Elector. This Gentleman maintains the Negative with much Erudition and Solidity. Dr. HAHN replied to it in 1736, and in ſome Citations from *Paulus Aegineta*, *Euſebius* and *Evagrius*, has given us their Teſtimonies of an eruptive Diſeaſe in their Time, which undoubtedly has a great Reſemblance to it in many Circumſtances. The Controverſy was conducted with much Learning, with great Politeneſs, and even Amity on both Sides, to the reciprocal Honour of the Writers. We do not find that Dr. WERLHOF rejoined on this Occaſion; and yet, after peruſing this Reply of Dr. HAHN's (who ſpares no Pains to ſupport his Aſſertion) and two auxiliary Letters from his Friend Dr. TRILLER, it ſtill ſeems improbable that the antient *Greek* or *Latin* Phyſicians knew this Diſeaſe, ſince they have left us any Room for litigating their Knowlege of it. If they had really ſeen it, it is not likely it would be leſs contagious, or much leſs mortal, in their Climate than in ours; and if that

were the Caſe, they muſt have been more remiſs, and leſs accurate than we have ſuppoſed them in the Deſcription of Diſtempers, to have omitted ſuch a ſpecific Account of one ſo popular and fatal, and attended with ſo many *Criſes* and *Stadia*, as ſhould ſuffer us to confound it with any other eruptive Diſorder, of which they were obnoxious to a great Variety. It is ſuppoſing them extremely inattentive and incurious, to omit taking Notice of its being manifeſtly contagious, as well as epidemical; not to advert to that extraordinary Circumſtance of no Perſons' being ſcarcely ever liable to a ſecond Attack of it; nor even to mention the indelible Scars and Deformities it muſt have frequently left behind it. Finally we muſt obſerve, that this Reply of Dr. HAHN's, which was dedicated to Dr. MEAD, and ſome *German Literati*, did not induce the Doctor to alter his Opinion of this Diſeaſe being unknown to the Antients, which he has ſtrongly affirmed in his late *Tractatus de Variolis*. P. 2.

But whatever Obſcurity may attend the Inveſtigation of its very firſt Appearance, which is not the moſt material Circumſtance, the intimate Nature and *Analyſis* of this external, material, primary Cauſe is likely to remain a Difficulty inſuperable by the human Faculties. And indeed if ſuch *Analyſis* might certainly conduct us to the Diſcovery of its ſpecific Remedy or Antidote, which ſome have imagined all Poiſons to have, the Non-attainment of it may be conſidered as one of thoſe partial Evils, to which the Condition

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of our Nature here irretrievably ſubjects us. For notwithſtanding the utmoſt Penetration, which many Individuals may be willing, from an ultimate Fondneſs for themſelves, to credit their Species with, it is evident, that our leaſt perplexed Reaſonings on ſuch exquiſitely minute Parts, and active Modifications of Matter, as elude our Inſpection and Cognizance, muſt be taken from their ſenſible Effects; and from our partial Knowlege of ſuch Subſtances, as commonly enforce, or reſiſt, their Operation. And here by the Way we may reflect, how ſimply at once, and how effectually, Nature has limited the Diſcoveries of Men, by rendering the Figure, Coheſion, Simplicity, or Compoſition, of certain Syſtems of Matter too ſubtil to be examined by our Senſes with the utmoſt Aſſiſtances of Art; which ſeem ſometimes to have inſtructed, have often entertained, and now and then have probably miſled us.

It is certain indeed that DIEMERBROECK mentions, (a) and even aſſerts a viſible peſtilent *Nubecula* or Vapour, exſpired from Perſons at the Point of Death in the Plague; and HODGES (b) admits

(a) Hic eſt ille halitus verus (a multis pro fabula habitus) de quo vulgares loquuntur, cum dicunt, ſe vidiſſe ab aegro, extremum ſpiritum reddente, exiiſſe venenum peſtilens, inſtar parvae nubeculae ceruleae, idque ſe inſinuaſſe in hanc vel illam rem —— docet experientia, ex rebus illis, in quas talem nubeculam tranſferri viderunt, poſtea caſu commotis vel excuſſis, peſtem non ſemel aliis adſtantibus communicatam fuiſſe. *De Peſte.* P. 67.

(b) Attamen non is ſum qui inficior auram hanc ſubtiliſſimam ſaepenumero corporibus craſſioribus, pinguibus et denſatae materiae immixtam, et fore olfactu et conſpectu perceptibile. *Loimologia.* P. 42.

admits the Adheſion of a peſtilent Vapour to the Curtains, *&c.* But theſe rather prove the Viſibility of the animal Vapour or Moiſture including it, which is alſo the Caſe of the variolous *Pus*, tho' a more groſs and palpable Vehicle: So that it ſeems abundantly inferable on the whole, that neither the peſtilential nor variolous *Miaſmata* can be ſeen, abſtracted from their involving Materials, any more than they can be weighed, or meaſured, by us.

But it may be affirmed perhaps, that the variolous *Primordia*, or Principles, are the Subjects of Smell, thro' which we are often ſuppoſed to be infected by them; ſince every Perſon is ſenſible of a peculiar *Fætor* or Scent (which it is ſcarcely poſſible to communicate an Idea of in Words) exhaling from ſuppurated Puſtules, and many have juſtly imagined from the Breath too, of Perſons in this Diſeaſe. It may be controverted however, whether this Senſation be immediately excited by the multiplied Principles of the Diſtemper, blended with the exhaling ſuppurated Humours; or be only the meer Smell reſulting from that Corruption of the Humours which they have produced. We are abundantly convinced of the evaporable Nature of the animal Fluids in a ſound State, and of a ſenſible Difference of the Odour of the Particles perſpired in oppoſite Complexions and Conſtitutions: And it is paſt Doubt that their Avolation, or riſing Steam, in a morbid or putrid State, will be attended with a ſenſible Difference, to whate-

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ver Cauſe ſuch State were owing. Yet as there is a Sameneſs in the Scent of this Diſtemper, in the ſame Degree, in all Conſtitutions (ſome Reſpect being had to the particular Smell of the Perſpiration from particular Bodies) ſuppoſing no Mortification of the Fluids nor Solids to ſupervene; it ſeems probable enough, that this peculiar State of the Humours could not be generated by any other Cauſe; nor leſs probable, that the exhaling Principles of the Diſeaſe concur with the tranſpiring Humours in compounding the variolous Scent: Since thoſe admitted Particles, whoſe Increaſe ſtimulates the whole Machine ſo powerfully afterwards, are not likely to be applied to the ſenſible Membrane of the Noſe, without ſome Degree of Irritation.

By the way it may be ſuggeſted here, that perhaps all the abſtracted Objects of Smell may be of ſuch very minute Extenſion, as to render them incapable of reflecting Light, and conſequently Colour (at leaſt to Creatures without microſcopic Eyes) whence they muſt be neceſſarily inviſible to us; and that their Levity muſt be more conſiderable than that of the *Medium* they float and aſcend thro', on which their Diffuſion and Activity muſt partly depend. It ſeems probable too, that they are exerted from the emitting Body with ſome Spring and Expulſion; and the different Degrees of this from different Subſtances may well concur to diverſify the Strength and Extenſion of different Smells; ſince the various Degrees of Motion, and Modes of Appulſe, will

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have their Effects, as neceſſarily as the Diverſities of Bulk, Weight and Figure.

Let us conſider, before theſe Reflections on Contagion by Smell are rejected as minute and trivial, whether they may not tend to ſome practical Uſe; and enforce the Reaſonableneſs of that Defence from this moſt pernicious Mode of it, which common Senſe ſuggeſts to every one, of carrying ſome odorous Subſtance in their Noſtrils, when they are obliged to viſit infected Places: ſince the very Room they occupy in the Organ of Smell may obſtruct the Admiſſion of the variolous Vapour that Way; while the Odours they emit, in a greater or leſs Quantity, and with ſome Force too, may actually repel, diverſify, or weaken, its malignant Appulſe, *in ipſo limine*, on the very Threſhold. As we are ſatisfied that Muſk is not an Odour, which repells or deſtroys the variolous *Miaſmata*, ſince the *Chineſe* add it to the infected Pellets they convey into the Noſe to impart the Small Pocks; perhaps ſome of the graveolent or ſtrong ſmelling Subſtances, as *Aſa foetida*, Rue, *Galbanum*, Camphire, or the like, which exert their Scents to a conſiderable Diſtance, might be found available. And as the vapid effœte Air, and the Humours we exſpire with it from the Lungs, are probably ejected with greater Force than our ordinary ſuperficial Perſpiration is, and Contagion is often received by Reſpiration; it were not amiſs perhaps, if the Breath were alſo impregnated with certain preſervative *Effluvia* on ſuch Occaſions. The faithful and experienced

ced DIEMERBROECK (1) aſſures us, that he found the frequent ſmoaking of Tobacco to be not only a conſiderable Defence in his daily Attendance on Perſons in the Plague of *Nimeguen* 1635; but even expulſive of the Contagion he manifeſtly received more than once: Whence we may infer, *a fortiori*, that this, or ſome other Fume, might act with equal Prevalence againſt a Poiſon, ſomewhat leſs pernicious and active than that of the Plague. Yet the ſame * Author judiciouſly diſapproves the taking of Tobacco in Subſtance, or Infuſion, in the Plague, from its violent and debilitating Operation. Now if any particular † Fume, or Odour,

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(1) De Peſte. P. 62, 63, 294, & alibi.

* It appears from *Diemerbroeck*, if we may calculate from his Hiſtories, that the Plague kills much above the ſame Proportion that eſcape thro' all the different Degrees of the Small Pocks taken together: For out of his 120 Hiſtories of the Plague, a few of which regard more Patients than one, 91 died. We may, on this Occaſion, contraſte the Candour and Modeſty of this brave and worthy Phyſician, with that of our modern Quacks and Advertiſers, who are zealous enough to publiſh and exaggerate every Succeſs, or Non failure, of their *Noſtrums*; as there can be little Diſingenuity in affirming, they are not leſs ſolicitous to conceal their ill Conſequences or Inefficacy. It were to be wiſhed therefore, that every Friend to the Public, who has been a Witneſs to any Inſtance of the latter, would as carefully apprize the World of it; that the real Merit and Demerit of their *Noſtrums* may appear from an equitable Calculation.

† An Experiment might be made by the Chineſe Inodoration, whether any of the abovementioned ſtrong-ſcented Subſtances, or any other, being added to the variolated Pellets, would prevent Infection from them. And if this ſhould ſucceed (tho' it ſeems rather to be doubted) an Experiment might be made on a criminal Subject of this Diſeaſe, immediately, or ſoon, after ſimple Inoculation; whether taking and repeating ſuch Subſtances, or ſuch a Medicine as *Boerhaave* recommended, would prevent its Operation on the Blood, or expell it without Eruption.

were found repeatedly preſervative from this Infection (ſince very different Smells poſſibly may, like oppoſite Taſtes, ſoon efface or extinguiſh each other) it would naturally lead us to try an Exhibition of the odorous Maſs itſelf, if not deleterious, whenever there was a Certainty, or ſtrong Suſpicion, of an infectious Accident. We have at preſent ſure Remedies for the Bites of ſome venemous Animals, which before were certainly mortal; and Analogy may induce us to hope, that this material, tho' ſubtil and inviſible Poiſon, when received, is not without its Antidote; nor even its Vapour without a Counter-vapour. At the worſt a fruitleſs Inveſtigation of ſuch a Preſervative would leave us but where we are; and might poſſibly repay the Inveſtigator, as COWLEY ſays of the Alchemiſts ſearching for the Philoſopher's Stone,

With good unſought Experiments by the Way.

The honourable Mr. BOYLE obſerves, not leſs juſtly than curiouſly, (1) 'that the Steams of Bodies may be almoſt as various as the Bodies themſelves that emit them; and that therefore we ought not to look upon them barely under the general and confus'd Notion of Smoke, or Vapours; but may probably conceive them to have their diſtinct and determinate Natures, oftentimes, tho' not always, ſuitable to that of the Bodies from whence they proceed.' Of Wormwood particularly he obſerves, 'that himſelf and others

(1) Fol. Edit. Vol. 3. P. 328, 329, 331.

others coming into a Room where ſome Quantity of it lay, found not only their Organs of Smell wrought powerfully upon by the Corpuſcles that ſwarmed in the Air, but that their Mouths were alſo ſenſibly affected with a bitter Taſte.' He infers ſoon after, 'that if our Senſories were ſufficiently ſubtil and tender, they might immediately perceive, in the Size, Shape, Motion, and perhaps Colour too, of ſome now inviſible Effluviums, as diſtinguiſhable Differences, as our naked Eyes in their preſent Conſtitution ſee between the different Sorts of Birds, in their Appearances and their Manner of flying.' And (2) elſewhere he aſcribes, with others, the pretty certain Ceſſation of the Plague at *Cairo*, on the Riſing of the *Nile* about the Middle of *June*, to the Exhalations from the River, and the Falling of a particular Dew at the ſame Seaſon.

As we are treating here of Contagion by Scent, it may not be amiſs to caution ſuch uncertain Subjects of this Diſeaſe, as viſit their variolous Friends or Acquaintance without any Apprehenſion of it; ſome, from a Tradition, that they have had it ſlightly in their Infancy, 'till Inſtances of a few of them receiving the true Diſeaſe have proved the former Puſtules a different Eruption; and others, from a ſilly Prepoſſeſſion, that they ſhall never take it, as they eſcap'd thro' former infectious Situations, or their Parents are ſaid to have died without having had it; ſuch, I ſay, ſhould cautiouſly abſtain at leaſt from viſiting Perſons under the ſe-

(2) V. 4. P. 288, V. 5. P. 189.

vereſt Load and Symptoms of it: Since beſides that the horrid Aſpect of a Friend in that Situation may poſſibly, in ſome Meaſure, infect the very Imagination, the Vapours from that Putrefaction, which often accompanies ſuch a Degree of it, may ſuperadd a different, and not leſs fatal, Infection. The following certain Hiſtory may juſtly enforce this Caution.

A waiting Boy in a Coffee-houſe in *Fleet-ſtreet* being allow'd a Holy-day in Summer, about 18 or 19 Years paſt, went with his Companions to *Shepherds-Buſh*, where the Body of a Murderer had been gibbetted for ſome Time before. The Day was ſultry, and the Body extremely offenſive. The Lad came very near it, and was quickly ſtruck with a moſt nauſeous Stench. He returned home, directly ſickened of a Fever with a vehement Head-ach, and died in 7 or 8 Days, complaining to the laſt of the ſame inextinguiſhable Stench. He complained alſo of a Pain in his Knees; and one of his Companions, who was likewiſe infected, but ſurvived, had ſuch an incurable Lameneſs, that he was forced to quit his active Employment in a public Houſe; and was put Apprentice to a Shoe-maker in the Country. But this by the Way.

Repeated Inſtances ſeem to render it probable, that Infection has been propagated by the Sight of Perſons, ſome Weeks recovered from this Diſeaſe, when they had been repeatedly purged; and where we might reaſonably preſume them diveſted of every infectious Thread. Now not withſtand-

withſtanding we can ſuppoſe, at leaſt, where any variolous *Effluvia* are ſtill tranſpiring (tho' the leaſt active will tranſpire the lateſt) that they may penetrate the very Eye with the immitted Light, and be tranſmitted from thence by the Optic Nerve to the Brain; and can alſo imagine that Bodies, abounding with the variolous *Pabulum* or Fuel, may be more ſtrongly attractive of ſuch *Effluvia*, and become impregnated with a leſs energic Ray of Infection, than would be neceſſary to excite the Diſeaſe in Conſtitutions, which have a fortunate Scarcity or Dampneſs of it: Yet where we ſuppoſe a total Abſence of ſuch *Effluvia* (which particular Circumſtances may very reaſonably induce us to ſuppoſe) and Infection ſpeedily ſucceeds the affecting Appearance of a late variolous Subject (which can preſent but a ſoftened Reſemblance of the Diſeaſe at its Height) this Mode of Infection, with Regard to our ſhallow Penetration, may be termed metaphyſical, and is what the merely corpuſcular Philoſopher will deny the Poſſibility of, with an *ex nihilo nihil fit*. But ſuch as can ſubmit to the coercive Evidence of plain Facts, whoſe Cauſes they are ſenſible exceed their Inveſtigation; and who have Recourſe to that Analogy which Nature obſerves in various Effects, will diſcover many ſuch obvious Appearances, as ſtrongly countenance the Reality of this Infection, tho' they do not demonſtrate the Manner of it. The Sight of a Perſon yawning, and even of an emetic Bolus with ſome Stomachs, will frequently communicate

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the ſame Motions to the Spectators, which corporal Laſſitude and material Stimulation produced in the Yawner or Patient. People of moderate Obſervation muſt have been convinced of very material Effects from preſent Objects, and even from the Ideas of abſent ones. I have been ſenſible of a ſhort and ſlight Irritation in my own Eye, from inſpecting, and not long, the inflamed Eye of a Relation. I am not naturally ſubject to ſuch a Diſorder, and this Effect has been repeatedly affirmed by medical Writers. Now if this was not in Conſequence of my Imagination's being affectingly impreſſed by Sight, there muſt have been a Tranſmiſſion of ſome viſible irritating Particles from the inflamed to the inſpecting Eye. If Imagination *did* produce ſuch an effectual Commotion in any of theſe Organs, will the affecting Sight of the late Subject of a dreadful Diſtemper, be leſs adequate to kindle up the Operation of the variolous *Fomes* or Fuel in the Blood; which Fuel will appear very probably to conſiſt of its moſt active and inflammable Particles? Not that I would conteſt a material Contagion from the Eyes of a very recently recovered variolous Patient; ſince a Perſon, who reflects with much Attention on this Subject, may rather be diſpoſed to fancy the very Paſſions attended with potent *Effluvia* exerted from, and admitted thro', the Organ of Viſion; whoſe tranſparent Humours are extremely fine and defecate; and, as they are conſtantly ſupplied, muſt neceſſarily alſo be expended and tranſpire: In which Reſpect they will only

only correſpond to the reſt of our Surface, which the Sagacity of *Hippocrates* diſcovered to be ἐισπνεον καὶ ἐκπνεον, inhaling and exhaling, in ſpight of his crude and inaccurate Anatomy. The Looks of the Malicious are darted with ſo acute an Obliquity, that they have been ſuppoſed by the antient Vulgar to emit a baneful Influence:

Neſcio quis teneros oculus mihi faſcinat agnos.

Our modern Multitude term it an evil Eye; and to our natural and ſtrong Averſion to ſuch Aſpects, perhaps we owe the Fable of the Baſiliſk poiſoning with his Looks: Tho' it is certainly well atteſted, that the Rattle-ſnake of *America*, whoſe Eyes in Purſuit of his Prey, are extremely ſparkling and emiſſive, has this fatally faſcinating Power over the Squirrel. * It is not unlikely indeed, that the great Terror of the little Quadruped may render it delirious; to which an odd muſk-like Odour, that is ſenſibly diffuſed from this Viper abroad, and perhaps particularly ſo at ſuch a Juncture, may materially contribute. In the Paſſion of Love, different Regards of the Countenance, as it is fortunate or otherwiſe, have been ſaid to act as Cordials, or chill like Diſeaſes: as if certain very different Emanations were emitted

* Mr. *Freeman*, a Gentleman of Probity and Repute at *Putney*, aſſures me he was an Eye Witneſs, in Company with another, of a Mocking Bird's running thus into the Jaws of a Rattle-ſnake, after much Flutter and Agitation to and from him, as he lay at the Foot of a Tree. Another Gentleman aſſured me of his having ſeen the like Fatality happen to a Nightingale near *Rome*, from a large Serpent of another Kind.

ted from, and admitted thro', theſe Avenues to the Soul; whence Dr. BAILY ſays prettily enough in his *Married Coquet*, 'Did you ever ſee me tangling Eye-beams with any Female?' an Image, that could occur only to a Phyſiologiſt. In brief, when we conſider the extraordinary Proportion and *Apparatus* of Nerves allotted to the Functions of this Organ; the intimate Connexion between its Office and that of the imaginative Faculty of our immortal Eſſence; and farther reflect on the certain Effects of our different Paſſions on theſe wonderfully organized Habitations of our Souls; tho' it will not demonſtrate the preciſe Mode of their *Hypoſtaſis* or Union, nor the perfect Nature of abſtract Mind, which, like the Eye, perceives all Things but itſelf; yet any corporeal Impreſſions from ſudden Dread will, like many other *Phænomena* we familiarly ſee, and cannot account for, ſurprize us leſs.

After all that has been urged againſt the impreſſive Force of the Imagination of pregnant Women, too many viſible Effects, joined to the Sentiments and Atteſtations of many eminent medical Writers, muſt preponderate, methinks, to our admitting it. Not to amuſe the Reader with any amazing Inſtances of it from FIENUS and others, who have collected many more than they gave Credit to, I ſhall inſert a very modern and authentic one, which ſatisfies me as well as a thouſand. The Right Honourable Lord COLVILLE (whoſe great Humanity and Goodneſs will pardon this Freedom) and my good Friend Mr. ALLEN,

ALLEN, formerly his Surgeon on the Station at *Boſton*, aſſured me they had frequently ſeen the Child of the Carpenter of the Ship his Lordſhip commanded there, who was born during that Station, with a remarkable Hare-lip. This the Mother declared to them happened from another of her Children running in, ſcreaming, from a bigger Boy with a great Hare-lip, who was purſuing him to beat him, about the third or fourth Month of her Pregnancy. The Surprize and Terror from it threw her into a fainting Fit, on her Recovery from which ſhe ſaid, ſhe was certain the Child ſhe went with would be marked with the Deformity, which the enſuing Birth, at the ordinary Term,* verifyed. And in fact ſo greatly did the fatal Copy in this Caſe exceed the Original, that the Diviſion of the Infant's Lip was continued into a Fiſſure or Cleft of the whole Roof down to the *Uvula*, commonly called the Palate, which was bifid or cloven; whence the poor Child being badly qualified to ſuck or to ſwallow, died, as it were ſtarved, within a very few Weeks after the Birth. Now in this Caſe it ſeems abſolutely improbable, that any *Effluvia* from the Hare-lip were received by the Mother, or the *Fœtus*. But her Imagination, terribly impreſſed by ſuch a diſagreable Sight, tho' unable

* A Caſe almoſt exactly like this is atteſted by *Boerhaave* as occurring at *Leyden*, within his own Knowlege. It is briefly related in his *Prælectiones de Nervis* p. 560, publiſhed at *Leyden* by Dr. *Van Eems* 1761. But this Impreſſion was made in the eighth Month of Pregnancy, at which Term *Mauriceau* thought the *Fœtus* too far advanced to be ſuſceptible of any Mark.

to alter her own fully formed and ſolid Lips, was effectual, and doubtleſs much againſt her Will, to imprint this aggravated Copy of the original Deformity, on the yet yielding and waxen State, as we may call it, of the Lips of her *Embryo*. And notwithſtanding the ſecret Proceſs which produced this Effect, may elude our Inveſtigation; yet ſince the Effect is inconteſtable, and the viſible Hare-lip in the grown Boy tranſmitted no infectious Atoms, that Diſeaſe being no ways humoral, but a meer bad Formation; the Mother's Imagination or Picture of it muſt have been the immediate Cauſe communicated, thro' her Mind, and impreſſed on the Lips of the Fœtus; which we conceive muſt be admitted as an ideal Cauſe, tho' acting upon Matter to a viſible Effect. And here a Man might naturally be tempted to wander into ſome metaphyſical, yet not wholly impertinent* Reflections, on this very curious Subject,

* Thus, abſtracted from thoſe celeſtial Meſſengers and ſupernatural Apparitions, which Heaven, for great Purpoſes, may perhaps ſometimes, however rarely, have ſent or permitted, the human Imagination ſeems, and not very ſeldom, to have created, as it were, Spectres or Phantoms, to the great Terror, and frequent Detriment of its Owners; the Deluſion in ſuch Caſes over-powering the Teſtimony of the Senſes. Excluſive of any Diſeaſe, in which it may be perverted by the State of its Inſtruments; in Dreams of the healthieſt Perſons, ſuch affecting Images and Circumſtances are ſometimes preſented to the Mind, as ſtrongly excite its different Paſſions, employing the corporeal Motions, as in the *Noctambuli*, or Sleep-walkers, and producing ſuch impreſſing Ideas of Horror, or ſuch mental Extaſies, as are inconſiſtent with Sleep. Hence this ſurprizing Faculty may be conceived as ſometimes endued with Powers, tho' in a much lower Degree, yet analogous to thoſe which the Scripture aſcribes to Faith; and thus be conſidered

ject, which would probably be more agreable to a few of his Readers, than to the Generality. — But the preſent Queſtion is, Whether a Sight of the freſh Marks of the Small Pocks, after all the infectious Particles are entirely evaporated, may not as powerfully excite the Action of a plentiful variolous Fuel in the Blood of the Spectator (eſpecially if he was ſurprized at the Sight) as the Mother's Sight of the Hare-lip communicated the like corporeal Deformity to the organized, or as yet perhaps organizing, Body in her Womb? And this Queſtion appears to me to reſolve itſelf pretty clearly in the Affirmative of ideal Influence, or Excitement, ſince it cannot ſtrictly be termed Contagion.

Perhaps, however, a curious Reader may doubt, whether he ſhall attribute the Infection of a *Fœtus*, whoſe (a) Mother had long before paſt thro' the Diſeaſe (but in the latter Months

conſidered as a very inferior Reſemblance or Tranſcript of its tranſcendent Source in the Deity; with whom to imagine, to will, and to effect is one inſtantaneous and indiviſible Act; however incomprehenſible this may prove to us, as our Comprehenſion is certainly very limited in this State, on which Limitation perhaps our Completion and Beatitude in another may partly depend. At the worſt however, this Conjecture is, but what we have been treating of —— Imagination.

(a) Memini mulierem quandam, quae ipſa morbum hunc diu ante perpeſſa erat, marito ſuo, eodem laboranti, ſub finem graviditatis aſſidue aſſidentem, foetum recto partus tempore enixam eſſe. Et illa quidem de variolis nihil contraxit; foetus vero mortuus, totoque corpore, mirum viſu! puſtulis foedatus ſe nondum in luminis oras egreſſum lue hac conſumptum fuiſſe manifeſte comprobavit. Mead *de variolis*. P. 66, 67.

Dr. *Fuller* mentions three Inſtances of the like Infection. *Exanth.* P. 192.

of her Pregnancy attended her Huſband in it, without the leaſt variolous Conſequence to herſelf) to a material; or, if we may be allowed the Expreſſion, to an ideal Infection. As the *Fœtus* is not ſuppoſed to reſpire in the Womb; and has moſt probably no Inhalation there of any Thing exterior to the Mother, ſo many Avenues to Contagion are cloſed up. It ſeems difficult to conceive that the Humours of the Mother, which had been already diſcharged of the Fuel neceſſary to the Diſeaſe, were a Vehicle or *Medium* of Contagion to the *Fœtus*; eſpecially if we embrace that Opinion, which ſuppoſes no Circulation of red Blood between the Mother and it, but concludes the red Blood elaborated by the Organs of the *Fœtus*, out of the Humours abſorbed by the *Placenta*; as we ſee the Blood of the Chick in *Ovo* manifeſtly elaborated without any further Communication from the Hen, than that of incubating animal Heat: except we ſhould conceive her to perſpire ſome very attenuated Fluid thro' the Shell and its Membranes to their Contents, which ſeems a more ſubtil than probable Conception.

But ſuppoſing the non-infectable *Serum* capable of conveying Infection, it is unknown how long the variolous Atoms (which may be received by all) are retained in ſuch Conſtitutions as are no longer obnoxious to their morbific Operation. I never remember myſelf uneaſy under reſpiring them, except in the firſt Patient I ſaw, who had a great Quantity of Puſtules, with great

Putreſcence,

Putreſcence, the Stench of which, after a little Qualmiſhneſs, ſoon purged me: I can alſo recollect a ſingle Puſtule on my upper Lip after it. Indeed Phyſicians, largely employed in this Diſtemper, muſt be very diſagreably ſituated, if even ſuch Conſequences were not very unuſual. Yet it muſt be retained ſome Time in the Mother's Fluids, to impart a material Infection; and poſſibly in Conſequence of her Pregnancy with a Subject ſo very ſuſceptible of the Diſeaſe, they might be more retentive of it: While its occurring, however contracted, before the Birth, muſt infer its *Pabulum*, or Aliment, conceived, congenerate, or born with us, and virtually exiſtent in the *Ovum*, *Semen*, or both: or otherwiſe the Humours, that conſtitute and nouriſh the *Fœtus*, muſt have acquired, in his Syſtem, a Diſpoſition they had loſt in their own. The Infection from an infected Mother is conceivable and * common enough, ſince the Stream may well be as impure as the Fountain. And tho' even in the preſent Caſe I do not preſume to exclude a material Infection, becauſe I find it very difficult to diſcover the Admiſſion, or to inveſtigate the † Rout, of it: yet, that the Circumſtance of

* Yet this is not *conſtantly* the Caſe, an ingenious Anatomiſt having lately aſſured me, he opened the Body of a Woman far advanced in her Pregnancy, who died of the Small Pocks, without imparting the leaſt viſible Infection of it to her Fruit. Had this Child lived and grown up, perhaps it might have proved one of thoſe few Subjects exempted from this Diſeaſe.

† Air may undoubtedly be involved in the Fluid communicated from the Mother to the Fœtus, and ſuch Air be contaminated with

of the Mother's Imagination being perpetually occupied with the Appearances of this Diſeaſe, in ſo intereſting a Subject, might excite the Operation of a plentiful variolous *Fomes* in her Fruit, without material Contagion, is to me, one of thoſe many difficult Probabilities,

— *Quae nequeo monſtrare et ſentio tantum.*

The moſt obvious, if not the only, practical Inference from this Speculation is, that it were to be wiſhed all Perſons, reſiding in large and populous Towns, and recently recovered from this Diſeaſe; eſpecially as many as wear the ſevereſt Traces of it, would, where their Condition will admit of it, impoſe a reaſonable Confinement or Receſs on themſelves, for the poſſible Benefit of ſuch as are ſtill liable to it.

But as we are ſuſceptible of efficacious Impreſſions alſo, from (a) Diſcourſe and Reflection, it would be ſtill more ſurprizing, if this Infection could be created, as it were, by frequent talking, thinking, or from a conſtant Dread of it; to which

with the inſpired Contagion, that was inoperative on the Humours of the firſt Recipient, though it muſt have found a luxuriant *Fomes* in the fœtal Blood. This however muſt give us ſuch a Notion of the exquiſite Minuteneſs and Penetration of the Particles of this Poiſon, as may nearly equal thoſe of the magnetical or electrical *Effluvia:* and it is too natural for us to heſitate at ſuch abſtract Suppoſitions, as our Imagination, that is chiefly affected by ſenſible Objects, is inadequate to the Defiguration of: tho' perhaps the Number and Variety of the evaneſcent Modifications of Matter may equal thoſe which are humanly perceptible.

(a) Ex audita hiſtoria truculenti caſus turbata mater ſimilem accepit efficacem ideam. *Boerh. Praelect. de nervis.* V. 2, p. 557.

which laſt Motive *Lucretius* (a) impiouſly aſcribes the firſt Notions of a Deity. This Manner of exciting a Diſeaſe (ſuppoſing its Poſſibility) muſt alſo be ideal, and that in a kind of deſcending or ſecondary Degree: ſince the impreſſing Idea in ſuch a Caſe, is not cauſed by the preſent and viſible Subject whence it firſt aroſe; but from its Remembrance and Name, from thinking and diſcourſing of it. The notorious viſible Propagation of yawning has been already mentioned; and I am convinced, that talking or even thinking for ſome time about it will produce the thing itſelf; ſo that the very Re-

(a) *Primus in orbe deos fecit timor.* ———

I ſhould conceive for my own Part, that a truly intellectual Reflection, abſtracted from every religious Pre-occupation, would ſuggeſt the Wiſdom of God, from a full Survey of the Creation, as inſtantaneouſly as his Power: ſince the abſurd Exerciſe of the utmoſt Power muſt impreſs but a very uncouth Idea of Perfection. Now the Attribute of Wiſdom would be apt to excite Admiration and Reſpect: tho' Love or Fear might be indifferently ſuggeſted from the Conception of his Power, according to the different Scene and Situation in which the unexperienced, but unprejudiced, intelligent Creature at once found himſelf; whether in a ſoft and temperate Climate, blooming with every Object to excite and gratify his natural Appetites; or in an extremely fervent or rigid one, ſurrounded with all the terrifying *Phænomena* of Nature, afflicted with painful Senſations, and finding nothing deſirable or lenient. The latter Scene might well indeed inſpire him with that Dread we conceive from the rigorous Exerciſe of a cruel Superiority: tho' ſurely the former muſt equally operate to the Effuſion of Love and Gratitude, when we conſidered his Power as eſſential to our Comfort as his Wiſdom: whence Hope might act as equivalently to the Belief of the Deity, as Fear. But as *Lucretius* has had no Regard to this Conſideration, and ſpeaks, on this Occaſion, rather like an Advocate *ex parte*, than a Judge, who is to ſurvey and ballance every Circumſtance, he is certainly too partial here to be philoſophical. But this by the Way.

Reflection on it, by reviving its Idea, muſt determine the nervous Influence, whatever that may be, to act in the ſame Manner, on, what we ſuppoſe the common Senſory, and thence on the ſame Muſcles, which are employed in producing that ſlight and ſhort Convulſion (tho' from a different Cauſe) in another Perſon. But not to ſubtilize too much on this Appearance, which can ſcarcely be termed a Diſeaſe, we acknowlege, we have never known nor heard, that in Countries, far removed from this * Contagion, any Horror of it has ever produced its Effects in the moſt inflammable Conſtitutions, and under the moſt inflammatory Way of living; tho' in a variolous Atmoſphere People have been known to colour on the Diſeaſe being mentioned, and to ſicken very ſoon after: one Inſtance of this I have really ſeen, but muſt obſerve, that the Gentleman, who was preparing for Inoculation, had very imprudently been at the Theatre the Evening before. He got well thro' a large Crop of the diſtinct Small Pocks. Mr. Boyle atteſts his having ſeen a Lady of Condition maſked, on Account of the Small Pocks, at a Viſit, whoſe Huſband then preſent informed him, ſhe was ſeized with them, on hearing a Perſon inadvertently mention the Lady's Siſter having them, which was before carefully concealed from her; there having been no Intercourſe between them during her

* Dr. *Fuller* ſays, to the like Purpoſe, he never met with a convincing Proof, that the Air alone, beyond, and out of the Sphere of Activity of the *Aporrhæas* of the Sick and infected Things, gave the Small Pocks or Meaſles. *Exanth.* P. 94.

her Sister's Disease. (1) But throughout *British America* they have always been able to trace every Visitation from it, up to its manifest* Introduction. And besides that nothing is more generally certain than the Observation of *Horace*, that we are more languidly impressed by hearing than seeing, we must reflect, that the morbid Effects of this Poison and the Traces of it are as proper Objects of Sight, as a Landscape, a Face, or any visible Object, which no verbal Description can revive an exact Idea of, tho' even a Pourtrait of them may; while the Life or Original communicates such a vivid and impressing one, as we can easily recollect.

Yet tho' Contagion seems not conveyable by meer Rumour, the (a) Dread, that is sometimes excited by it, has been thought by eminent Physicians to render the Subjects of any popular Contagion more readily and fatally impressible by it, whenever it shall approach their Residence. And indeed as great and habitual Fear is attended with an unu-

 sual

(1) Vol. 1. P. 513. Where is also annexed another extraordinary and well attested Instance of the Effects of Terror. Dr. *Fuller* has three Instances of this Infection from Fear or Fancy, in his *Exanthematologia*. P 189.

* It must be reasonable to infer from this, that such a Disposition of the Air, as several medical Writers have thought sufficient of itself to generate the Small Pocks without the least personal Contagion, has never hitherto occurred in the new World, whatever it may hereafter. The Climate of its Nativity may possibly be more obnoxious to a Reproduction of it.

(a) Etiam qui sunt timidi, et maxime hunc morbum *(variolas)* perhorrescunt, in eum promptius incidunt; timore enim miasmatis particulae a superficie corporis intus convehuntur.

Willis de Febribus, P. 118.

ſual Waſte or Depreſſion of the nervous Power, whence a leſs vivid and generous Circulation, and thence a diminiſhed Perſpiration ; it is not improbable that the inhaling Veſſels, in ſuch a State, may be more abſorbent of any ambient Contagion, at the very Juncture when the Blood is likely to be leſs depurated, both from the impaired Functions of the Organs, and from an Abatement of its ordinary Secretions and Excretions. Be this as it may, it muſt be ſurprizing to reflect, that the Relation of his Recovery to a variolous Patient (whoſe real Diſeaſe, by Reaſon of his exceſſive Dread of it, was concealed from him throughout his Decumbiture) had ſuch a mortal Effect, that he inſtantly dropped down dead without uttering a ſingle Word ; which is ſaid, to the certain Knowlege of many, to have happened to a noble Patient of the late ingenious Dr. HOLLINGS : and this was near to being the Caſe of a Patient of two eminent Phyſicians, one of them ſtill living, which Patient fell directly into a Fit from the ſame Occaſion, but out of which he recovered ; both which Facts have been affirmed to me by one of the Gentlemen concerned in the laſt ; and a third, very ſimilar, occurring ſome Years paſt in *York-Buildings*, by a worthy phyſical Gentleman then in that Neighbourhood. Such Facts have indeed no direct Reference to Contagion, but ſhew how very affectingly the Mind may be ſhocked with the Idea of it, however excited. The Survivor here only can inform

form us, whether this were owing to * Joy or Surprize; as an Exceſs of either might render the ſentient Principle inattentive to the Accumulation of the Blood in the right Ventricle of the Heart; whence no *Syſtole* enſuing, a fatal Collapſion of the pulmonary Arteries and the Lungs might enſue, and the Circulation inſtantaneouſly ſtop. This mortal Effect others, in (1) a briefer Manner, attribute to the immediate Diſſipation of the vital Spirits, from the ſudden and exceſſive Perſpiration of the Brain and Heart. In ſuch ſurprizing Events however, it were prudent not to omit an artificial Inflation of the Lungs, as we are informed that a (2) Man ſeemingly dead for above half an Hour, had been recovered by this Means.

It is too obvious however, that all the different Modes or Admiſſions of Contagion furniſh us with no Idea of the Size, Shape, Texture or Denſity of its Particles. We are unwilling to *aſſert* what will admit of no Proof; but it is not irrational to *ſuppoſe*, that from the firſt Degree of

 Exility,

* *Boerhaave* appears convinced of the mortal Conſequences, which may reſult from exceſſive Joy, by giving an Inſtance, within his own time, of the immediate Death of a young Woman of a reſpectable, but reduced, Family, on her Bother's (who had been made a Governor in *India*) ſhewing her on his Return, ſome rich Ornaments he had brought for her. *Prelect de nervis.* p. 553. Neither is it very ſtrange, on proper Reflection, that great and ſudden Alterations in the Mind ſhould act as fatally, as great and ſudden Alterations in the Air, and more inſtantaneouſly; their Operation immediately affecting thoſe tender and intimate Receſſes, and that exquiſite *Medium* or Fluid, which may primarily, however inconceivably, conſtitute the *Nexus* or Union of Life with Matter.

(1) Sanctor. De Gorter. (2) Medical Eſſays. Vol. 5. Art. 55.

Exility, where Objects commence inviſible to human Sight (ſince many Inſects muſt ſurely ſee ſuch as evade ours) there are innumerable minuter ones of material Exiſtence, that mock all organical and artificial Inſpection; whence we may conceive Exility as endleſs as Magnitude. We ſhould be apt indeed to ſurmiſe, that Particles ſo extremely light and attenuated would be incapable of any violent Operation on the human Syſtem; did we not reflect, that the Degrees of Motion, annexed to different Modifications of Matter, are as innumerable as thoſe of Extenſion; that Velocity may be rendered equivalent to Weight; and that Form too is equally multifarious, complex, and conſiderably operative. We ſhould further contemplate, how porous and yielding many Particles of our animal Fluids may be, and how adapted to attract, and be impreſſed by, the inviſible Seeds of this Contagion: as certain palpable Poiſons are known, like different Menſtruums, to have their appropriate Subjects, ſome acting on the Membranes, ſome on the Blood, and others, not improbably, on the animal Spirits. The fuſing irritating Operation of this inviſible Venom might induce us to ſuppoſe its Particles ſpicular, ſharp, or angular; but as they are generally received without a very remarkable Irritation, and not ſeldom inſenſibly, they may perhaps be ſmooth, and even ſpherical, on their Admiſſion; 'till after having been lodged and macerated a certain Term in their proper Soil, the human Blood, they burſt their aerial

Capſulae

Capſulae and germinate, emitting their Contents, which attract the aſſimilable Parts of the Blood; the Sphericity and Smoothneſs of whoſe Globules they probably more or leſs impair. In ſome Habits they multiply themſelves and deſtroy its Coheſion, to ſuch a Degree, that the red *Cruor* paſſes off by the Glands of the Kidneys, Inteſtines, *&c.* and attenuate it ſo far in all (probably by an Increaſe of its inteſtine, as well as circulatory, Motion) that the variolated Particles are tranſmitted to the Surface thro' thoſe ſtrait Paſſages, which, as red Globules, they could not paſs in a healthy State; while the *Foveae*, or Pitts, they leave in the Surface, and eſpecially in the Face, demonſtrate their own corroding Quality, or the vitiated *Craſis* of their involving Fluids. Hence they gradually tranſpire, and often with a monſtrous Increaſe, moulded perhaps, in ſome of the perſpirable animal Vapour, to the ſame inviſible Form in which the Patient received them.

Many of theſe Effects of this Contagion are abundantly certain and perceivable; tho' whatever is ſuppoſed of its Eſſence and Form is wholly conjectural. And as we perceive its Effects manifeſtly propagated from Man to Man, the Difficulty of accounting for this Diſeaſe in the firſt, who could receive it from no other, the variolous *Adam*, or Prototype, as we may term him, put Dr. LISTER on imagining, that both this and the venereal Diſeaſe were firſt occaſioned by the Bite, or by eating, of ſome venemous Animal; a Suppoſition rather whimſical than judicious. For

were

were we to ſuppoſe (what has never been known) that the eating, or Bite, of a venomous Animal might be attended with ſuch an Alteration of the Blood, as ſhould terminate in Pock-like Eruptions, with the general Symptoms and Stages of the Small Pocks; it is not equally ſuppoſable, that the *Effluvia* from Puſtules, ſo excited, ſhould communicate the ſame entire Effect with the admitted, or injected *Virus*, which produced them; and thence extend the Diſeaſe to an indefinite Succeſſion of Subjects, in whom the primary Cauſe never exiſted. Such an Hypotheſis would make the Perſpiration of a Perſon fatally bit by a venemous Animal, as dreadful as the Bite itſelf. Our Priſon Diſtemper, which muſt be aſcribed to the Force of very foul *Effluvia*, does not appear to be infectious in the * ſecond *Series* or Inſtance; ſince thoſe Spectators, who are infected (and too often fatally) by the Stench of the Priſoners, and are wholeſomely and ſweetly lodged,

* This we conceive will hold good, notwithſtanding a few Hiſtories contained in ſome former Magazine, and aſcribed to the ingenious Dr. PRINGLE. One of them affirms the Infection of a Woman without Newgate, who took it from her Huſband, a Carpenter, frequently employed in the Jail about the Ventilator; and who, beſides the Infection he inſpired, probably brought more home in his Cloaths, whence his Wife's might be equally from the primary Cauſe with his own, and with that of the Gentlemen infected in Court. Beſides which we conceive, that the Lodging of ſome poor People in cloſe little Apartments, and unventilated Allies, and their wretched Way of living from Neceſſity, Uncleanlineſs, or both, may produce Vapours not much leſs feculent and deleterious than thoſe in Newgate: ſince we do not ſuppoſe the Air there rendered ſuch by the Crimes of its Inhabitants, but by their Confluence and Confinement, their Squallidity and Wretchedneſs.

lodged, do not infect their Phyſicians or Attendants (which the Boy killed by the Stench of the Carcaſe, p. 12, did not,) but are very probably infected themſelves by the immediate primary Cauſe of the Diſeaſe, the feculent excrementitious animal *Effluvia*, tranſported from the Jail to the Court in the Cloaths, or from the Perſons of the Priſoners, tho' not actually then under the Diſeaſe themſelves; and to the greater Diffuſion and Malignity of which the Heat, Preſs, and Want of freſh ineffæte Air, in the Court (more crouded than the Priſon) may well contribute. As a potent and contagious Poiſon then is generable from the Accumulation of excrementitious animal Vapours, will it not admit of ſome Doubt, whether Animals, expiring ſuddenly or ſoon in the Air-Pump, die ſolely from the *meer* Excluſion of elaſtic, or otherwiſe, vivifying Air; or whether the Retention of their own Vapours may not a little concur to it, as a poſitive and material Cauſe, with the Privation of Air? I have heard from Gentlemen, who have reſided in *Turkey*, that the Plague has been ſeldom known to rage, as it is probably never bred, but in large and populous Cities; which, with regard to Health, and to the Contingence of Fire too, ſhould never be too cloſe and narrow. For doubtleſs, not only the Temperature of our Climate, but the great Flux and Reflux of the *Thames*; the Draught of Wind that generally accompanies the Courſe of Rivers; and the airy perflable Situation of this vaſt and populous City,

greatly

greatly conduce to the Healthineſs of a Place, ſometimes as replete with animal Steams as many Priſons are.* And here we ſubmit it, whether the greater Mortality by the Small Pocks, happening frequently in Winter here, may not, in ſome Meaſure, be occaſioned, as well by the greater Throng and Preſs of Reſidents during that Seaſon, as by their conſtituting more Subjects of it.

But to conclude this imperfect Contemplation of a Poiſon, whoſe Eſſence we can no more effectually inveſtigate, than we can weigh Light, or analyſe Darkneſs (whence it may ſeem equally prolix and fruitleſs to many, tho' it ſhould entertain a few) we ſhall obſerve, that an attentive Conſideration of its general Effects may ſuggeſt ſuch a tolerable Conception of it, as ſhall diſpoſe

* Hence in various Diſorders, but more particularly in thoſe of the Breaſt, many of the Inhabitants find the beſt Advice, and moſt potent Medicines ineffectual, without the Aſſiſtance of a more pure and ſimple Air. We may hence alſo form ſome Eſtimate of the great Advantage of Ventilators in Jails, Hoſpitals and Ships; in the laſt of which, eſpecially when overcharged with Priſoners, we have heard, from undoubted Teſtimonies, the moſt ſatisfactory Accounts: So great are the Benefits that have accru'd to our Species, from the Talents and Aſſiduity of one genuine Philoſopher and Philanthropiſt, whoſe long Life has been employed, with an unoſtentatious humble Imitation of his divine Maſter, in meditating, in doing Good—Scarce had I cloſed this grateful Acknowlegement of his living Merit, and of my perſonal Obligation to him on a very ſhort Acquaintance, when the News of his Death aſſured me, his benevolent capacious Spirit was received with an *Euge bone et fidelis!* into a Fruition of the Treaſures he has perpetuated above, by a charitable, unambitious Care to accumulate ſo little below.

—— Cui pudor, et juſtitiae ſoror
Incorrupta fides, nudaque veritas,
Quando ullum inveniet parem?

diſpoſe us to the moſt rational and ſucceſsful Treatment of the Diſeaſe; by directing ſuch *Regimen* and Remedies as oppoſe its extreme Effects, without fruſtrating its *Criſis*; and by avoiding ſuch, as are generally attended with ſome of its own Operations. Not that we deny but ſome very extraordinary Symptoms, whether from an unuſual Irregularity of the Diſeaſe, or the peculiar State of a particular Conſtitution, may juſtly warrant (from a directly vital Indication) ſuch Method or Medicines, as are not agreable to the general Diſpoſition of the Small Pocks.

Nevertheleſs tho' we have declined here, and always neceſſarily muſt decline, a preciſe and material *Analyſis* of this particular, inviſible, and volatile Poiſon; yet when we treat of its Effects on the Blood, by a Combination with its inherent Fuel or Nouriſhment there, we ſhall attempt to infuſe the moſt ſuitable Idea of it, which the Proceſs of the Diſtemper, and our moderate Qualifications ſhall preſent us.

Section II.

Of the variolous Fuel, or internal inherent Cauſe of the Small Pocks.

BUT the variolous *Primordia* or Principles, however ſubtil and malignant, would ceaſe to be infectious, however admitted, did they not meet with ſome prediſpoſing Quality or Particles in the Conſtitution, that afforded them a ſuitable Lodging and Nouriſhment for their Propagation and Increaſe.

If we attend here to the obvious Evidence of Facts, the Certainty of this Propoſition muſt be abundantly evinced by our obſerving, that on the Inflammation ſubſequent to Infection, a greater or leſs Quantity of inflamed Humour is viſibly expelled to the Surface: that on its entire Expulſion the inflammatory Symptoms ſubſide, or conſiderably abate: and that on the Evaporation of ſuch infected and infecting Humours, the individual Conſtitution is exempted from a repeated Infection of this ſpecific Kind. I am ſenſible that ſome, who admit this State of the Facts, may attribute ſuch Exemption to an Alteration effected in the Solids, and particularly in the Integuments, by the Diſeaſe. This was Dr.

DRAKE's Conjecture, who ſuppoſed ſuch an Enlargement of the cuticular Ducts and Pores from their Diſtenſion by it, that they could never afterwards confine the variolous *Miaſmata* ſufficiently to repeat their Action on the Humours: whence it ſhould ſeem, as if he entertained no diſtinct Notion of a particular Matter in the Conſtitution, ſpecifically nutritive of this Diſeaſe: or elſe thought it either renewable there, or not expelled by any *Criſis* of the Diſtemper, tho' no longer effectually impreſſible, from the Accident of a more yielding and open Surface.

Had we repeatedly, tho' but rarely, obſerved, that any former Subject of this Diſeaſe, who had paſt the lighteſt Degree of it (however contracted) with the ſmalleſt Eruption, was ſometimes obnoxious to a ſecond and internal Infection from it; while ſuch as had eſcaped through the confluent, coherent, or a large Proportion of the diſtinct Kind, and whoſe Teguments were ſenſibly altered by them, only eſcaped a Re-infection, and that without a ſingle Exception, ſuch Evidence muſt have reflected very great Probability on this *Hypotheſis*. But the Contrary to this, the equal Exemption of all who have had the genuine Small Pocks, however few or favourable, being eſtabliſhed by the Experience of ſome Centuries, the Fallacy of it is manifeſt from the ſame Evidence, that atteſts the previous Exiſtence, and final Extirpation, of the variolous *Pabulum*. BOERHAAVE indeed expreſſes himſelf (after affirming his Surprize that neither himſelf nor any

other was ever twice attacked with it) as if he imagined the Small Pocks had left ſome poſitive and material Quality in the Conſtitution, that indemnified it from a ſecond Infection, which ſuggeſted to him the Probability of expelling the Contagion, and thence preventing its Effects, by ſome Specific, without Eruption: (a) but, with Submiſſion to the Memory of ſo great a Maſter, it ſeems more obvious, and equally rational, to ſuppoſe, that the inherent Cauſe of this Diſeaſe was expelled with the external, in the ſeparated and diſcharged Humours.

Some few medical Writers have aſſerted a ſecond variolous Infection, that is, a ſickening and internal, not a merely external, one, to which Nurſes are frequently liable. BOERHAAVE ſays,* a Perſon having the diſtinct Sort is ſtill liable to the confluent, but not *e contra*: and Dr. WILLIS

(a) Hinc mirum eſt quid lateat, quod quis non iterum hoc contagio inficiatur; nam ego habui variolas octavo anno aetatis, & nunquam iterum aliquid de contagio ſenſi, cum tamen tot aegros tractaverim — hinc in his qui illas habuere, aliquid haerere debet, quod facit, ut in illo corpore haerere, nec variolas producere poſſit, & quod ſuperet hoc venenum; ergo puto in rerum natura eſſe aliquid, quod illud venenum expellit ſeu ſuperat, ſed artis eſt invenire. *Prax.* Vol. 5. P. 308.

* Ibid. P. 299.—This, however qualified, conſiderably contradicts the juſt cited Aſſertion, to which indeed it is previous. And here we cannot omit to obſerve, that tho' the Matter of this *Praxis* is often not unworthy of *Boerhaave*, the Manner and Expreſſion very generally are: ſince it is not only barbarous and impure, but ſo very frequently ungrammatical (to ſay nothing of the Multitude of typographical Errors) as to perplex the Senſe. In Fact it is impoſſible it could have been printed from any MS of his; and it has been ſaid to have been thus publiſhed by ſome of his Pupils, to provoke him to a genuine Edition; though the Provocation was ineffectual.

LIS has (b) mentioned, not ſpecified, even a third Infection. It were to be wiſhed this learned Phyſician had informed us, whether this were from his own Knowlege, or from Report, in which even Writers of Merit have ſometimes too lightly acquieſced. And as other eminent medical Writers, of great Experience and Veracity, have affirmed, that they never recur in the ſame Subject; as I never perſonally met with any intelligent Phyſician or Practitioner, who ever ſaw ſuch a Re-infection, tho' he muſt be both the beſt Judge and the likelieſt Subject of it himſelf; and never knew it to occur in any one of ſeveral hundreds I have ſeen in the Diſeaſe, I cannot avoid concluding, that ſuch Reports are very generally founded in Deception. A Majority of thoſe ſuppoſed to have had this Diſtemper twice (having manifeſtly undergone it in Town) had their firſt Eruption in the Country, where doubtleſs it is more likely to be miſtaken: and as all eruptive Fevers have ſome common Symptoms in the previous *Apparatus*, or Attack, which abate or vaniſh on the *Criſis* of Eruption: as the Swine and Chicken Pocks fairly maturate, while the* Cryſtals fill with more dilute Contents; the Inexperience of the Practitioner, and Ignorance of the By-

(b) Licet autem venenata hujus morbi ſemina ut plurimum ſemel & unica aegritudine ſolent diffiari; quandoque tamen accidit ut, parte miaſmatis relicta, bis aut ter aegri in hunc affectum inciderint. *De Febribus*, P. 118. *Oper. in 4to Ed.* 1682.

* By theſe are not meant the cryſtalline Small Pocks, but a different eruptive Diſeaſe mentioned under this Name by Dr. FULLER in his *Exanthematologia*, which ſeems to occur but rarely. I ſaw it

By-ſtanders, in Places long unviſited by the Small Pocks, may ſubject them all to miſtake any of the other for it. And as ſuch other eruptive Fevers are ſcarcely ever mortal, tho' ſometimes attended with conſiderable Anxiety and Sickneſs before Eruption, the Satisfaction of the Patient and his Friends, and the Reputation of the Practitioner, will diſpoſe them all to acquieſce and even to exult in the ſuppoſed Cure of a perilous Diſeaſe, to which they unanimouſly conclude the Patient no longer expoſed.

To allow the faireſt Scope however to this Aſſertion of a repeated internal Infection, we ſhall not omit, that Mr. SAM. DWIGHT gives an Account, and, as it ſhould ſeem, from his own Knowlege, of a Nurſe who had the confluent Small Pocks twice, and died of a third Infection, from attending a Patient in a high Degree of it: and as ſhe ſcarcely ſtirred out of his Room for three Weeks, he aſcribes this moſt extraordinary Diſeaſe to that Circumſtance. Had I perſonally known this Author, or been well informed of his Character, I ſhould be better qualified how to eſtimate his Evidence; which I do not chuſe to reject, becauſe his *Latin* is not very elegant; becauſe his tracts *de Vomitione*, *de Purgatione*, and *de*

it once however very plainly, and knew it ſolely by his Deſcription, which is exact. There was great ſickneſs, and chiefly at Stomach, before Eruption, but not the leaſt Complaint or Fever afterwards. The Eruptions were moſtly confined to the Face, pretty numerous, larger than the Small Pocks, of much quicker Growth, looked not unlike ſmall Veſications excited by a Burn before they are cut, the Contents being very dilute, and, to the beſt of my Remembrance, not leaving a ſingle Pit.

de Variolis & Morbillis contain little new or memorable, tho' he is vehemently ſolicitous with his Readers not to tranſlate them; nor, finally, becauſe his Name is without any medical Appendage; ſince Circumſtances greatly more important could never undo a Fact: but my Diffidence ariſes from his not ſpecifying, that he had ſeen the Nurſe himſelf in the two firſt confluent Infections, and in the laſt mortal one, from the Small Pocks. He ſays indeed, her Face and Body were miſerably ſcarred, * *miſerrime dilaniata*, by it twice before, a Circumſtance in which it was difficult to be miſtaken: and tho' ſuch an Inſtance having never occurred within my own Knowlege, nor any Perſon's of my Acquaintance, renders it not a little indigeſtible to myſelf, I refer the Reader to make his own Judgment of it, from the 59th Page of thoſe Tracts printed here in 1722.

Beſides, notwithſtanding I cannot allow my own Aſſent to thoſe many Aſſertions of Dr. CANTWELL's in his firſt *Lettres ſur Inoculation*, by which he would perſuade us, that certain Perſons in *France*, moſt of whom he names, have had the Small Pocks from twice to ſeven times; which being admitted, we might reaſonably ſuppoſe them liable to it as often as others may be to a venereal Infection, or to a Paroxyſm of the Ague, Gout, or Cholic: Yet I readily acknowlege, that in the laſt Pamphlet which Dr. *Cantwell*

* If this were a certain Fact, it would be entirely deciſive againſt Dr. DRAKE's Reaſon, Why this Diſeaſe never re-infects the ſame Perſon.

Cantwell publiſhed againſt Inoculation at *Paris*, during my Reſidence there in 1756, among ſeveral further Inſtances which he gives of ſuch repeated Infections, the very learned and polite Dr. SENAC ſelected the third Example *Cantwell* mentions, which Patient the Dr. aſſured me he had ſeen, and really judged his Caſe to be a ſecond variolous Infection. We ſubmit this truly reſpectable Authority to our Readers, with this further Acknowlegement, that the *French* ſeem more generally to imagine the ſame Perſon may be infected again with the Small Pocks, than we can find Reaſon for admitting in this Iſland; notwithſtanding SIDOBRE's reckoning us amongſt theſe Nations, whom he ſuppoſes more liable to ſuch repeated Infections, than the Inhabitants of the warmer Regions of *Europe*. On the other Hand it is but equally impartial to add, that CHESNEAU, an eminent *French* Phyſician, aſcribes the imaginary Repetition of the Small Pocks in *France* to their Doctors and Patients often miſtaking ſome other febrile Eruption for it. And this Dr. TYSSOT, an eminent Phyſician of *Lauſanne* in *Swiſſerland*, informs us, was alſo the Judgment of JACKSON and SCARDONA two *Italian* Phyſicians.

Since the firſt Edition of this Treatiſe, we find ſuch Diſputes concerning the moral and medical Fitneſs and Unfitneſs of Inoculation have, naturally enough, ariſen on the Continent, as our much longer Experience of it has happily terminated in its Favour here. This, at no extremely diſtant Period, muſt with great Probability,

lity, be the Caſe there too; ſince Time, that ſure, but ſometimes ſlow, Eſtabliſher of Truth, ſeems gradually advancing to the Demolition of ſtill more important Deluſions in *Europe*, than a bigotted Oppoſition to this ſalutary and ſaving Practice. On this very Point then of a repeated Small Pocks, we find that the learned Dr. TYSSOT, in his Anſwer (1759) to the *Queſtions concerning Inoculation*, by the learned Dr. HAEN of *Vienna*, cites† above twenty reſpectable Authors, to prove, that the Small Pocks never, or ſcarcely ever, re-infect the ſame Perſon. In reply to this Dr. HAEN, in his *Refutation de L'Inoculation* (1759) * cites eighteen Authors, ſome of them the very ſame with Dr. TYSSOT, to prove the Small Pocks frequently re-infecting the ſame Subject. And tho' many of theſe laſt may ſeem of equal Authority with the former, there are others that read more like phyſical Legends or Romances than Hiſtories, and require a moſt extraordinary Credulity to digeſt them. Such for Inſtance is that from DECKER, who affirms he knew a Girl, that having had the Small Pocks five Times, became more and more deformed; ſo that at length ſhe dare not ſhew herſelf; and was at laſt carried off by a bad ſort from the ſixth Infection. He had juſt premiſed another ſtrange Caſe, wherein the firſt variolous Infection had ſo deformed a young Girl, that ſhe was commonly termed, *The Antidote to Love*. But when ſhe arrived to the Age of Fifty, her Appearance was

† *Lettre a Mr. de Haen* P. 91. to 96. * P. 4. to 20.

ſo greatly improved by a ſecond Small Pocks, that he ſuppoſed all Ladies who had been disfigured by it, would gladly conſent to have it a ſecond Time, on Condition of their Beauty being equally reſtored by it. Dr. HAEN alſo refers to FERNELIUS' citing *Borel* for the Caſe of a Woman at *Boulogne*, who having had the Small Pocks ſeven Times, was killed by the eighth at the Age of one hundred and eighteen. However, were we to ſuppoſe, upon the whole, the Teſtimonies and Opinions produced *pro* and *con* in this Diſpute to be exactly of equal Weight, they could only amount to none, by ſtrictly counterballancing, or even effacing, each other: this muſt conſequently leave us to be determined by our own Experience on this Point, which will manifeſtly declare for, the genuine, the frequently mortal, Small Pocks, being very rarely indeed, if ever, repeated on the ſame Subject, in the *Britiſh* Iſlands. And if, according to the common Axiom, *Rara non ſunt artis*, ſuch unuſual Appearances are not ſtrictly the Objects of Phyſic, we may well conclude of ſuch as occur next to never —— *Perrara nequaquam ſunt*. To form ſome Supputation however of this poſſible Deviation, or ſporting as it were, of Nature in this Reſpect, from her moſt general Rules in the Conſtitution of human Bodies, let us admit the Caſe recited from Mr *Dwight*, that of *Cantwell*'s verified by Dr. SENAC, and the four Caſes related by DIEMERBROECK (which he terms ſo many aſtoniſhing unaccountable Inſtances) to have been genuine variolous Re-infections;

tions; we may rationally infer, that not more than one in ten Thouſand, inſtead of the Million we formerly ſuppoſed, is liable to a repeated Viſitation from this Diſeaſe. Hence it will follow, that ſuch very rare Conſtitutions only can be reinfected after an efficacious Inoculation, of which Miſs TIMONI muſt have been one, who is proved by Dr. HAEN, on the accurate Inveſtigation and Teſtimony of Mr. MACKENZIE,* to have died of a natural Infection, caught from her inoculated Brother and Siſter, twenty four Years after that ſhe received by Inoculation at the Age of ſix Months. We leave this extraordinary Caſe to have its juſt Weight, and no more, in the Scale againſt Inoculation: while Dr. HAEN unreaſonably thinks it ſufficient entirely to aboliſh the Practice.

Admitting therefore, under ſuch juſt Reſtrictions, the *poſſible* Contingence of a ſecond Decumbiture from this Diſeaſe; if we find it too difficult to conceive a partial Conſumption of its *Pabulum* at different Periods, (at which we may be told, 'certain Parts of it become ſufficiently ripe to be impregnated') we muſt attribute it to a new Creation, as it were, of that *Pabulum*, which was probably coeval with the Patients very Dawn of Exiſtence; was extended afterwards thro' his extending Growth; and which had been ſince expelled from his Habit, by the Operation of its ſpecific and correſponding *Virus*; a Circumſtance that ſtrongly indicates how very rare ſuch a Contingence muſt be. Dr. WILLIS

* See *Haen's Refutation de L'Inoculation*, P. 53. to 58, &c.

indeed ſuppoſes, in the Paſſage already cited, that the whole *contagious Principles may not be conſumed by a ſingle Diſeaſe, but ſuffice for a ſecond and even a third: but ſurely it appears more eaſy to conceive, more rational to apprehend, that a plentiful Reception of them into ſufficient Fuel would kindle at once to a very dangerous or fatal Exploſion. I ſhould as naturally look for this Effect in the commixed and circulating Blood, as for the Deflagration of every Grain of Gunpowder, from the Contact of Fire with any Part of an uninterrupted Train of it, however contorted; tho' by no Means as inſtantaneous a one. And this appears, beyond all fair Diſpute, by far the moſt general Conduct of Nature in this Diſeaſe.

I have been the more particular on this contingent Renovation of the *Fomes*, which a repeated variolous Infection ſuppoſes, as the latter has been more vehemently affirmed, ſince the Uſe of Inoculation, by its Opponents, who have particularly confined ſuch ſuppoſed Re-infection to the inoculated: while its moſt rational Advocates conclude an efficacious Inoculation juſt equivalently preſervative with the natural Diſeaſe. But of the Probability and Proof of this more profeſſedly in a ſubſequent Section.

Some Phyſicians have judged this internal prediſpoſing Cauſe of the Diſeaſe more indiſpenſable to

* This he terms *Miaſma* here, which we chuſe to refer rather to the infecting Principle than to the infected Particles, tho' the variolous *Pus* includes both. It may be queried however, whether he did not intend the latter.

to its Exiſtence, than the external procatarctic one, the Union of which conſtitutes its immediate Cauſe. Thus WILLIS affirms, (a) that Perſons have been ſeized with it after a Debauch, or very violent Exerciſe, when no other for a conſiderable Diſtance round about had been of a long Time infected. This looks at firſt indeed, as if there might be an effectual * *Succedaneum* to variolous Contagion (if that could be a *Deſideratum* in Phyſic) while a proper *Subſtratum*, or Receptacle, for it ſeems as indiſpenſable to its Operation and Increaſe, as the Ventricle to that of an Emetic, or the *Ovarium* to Conception. But notwithſtanding we can readily conceive Bodies, thus circumſtanced, to be peculiarly ſuſceptible, and as it were attractive, of this Contagion; yet there is the leſs Certainty of this ſuppoſed *Succedaneum* to it, as the Diſtemper has never been known to occur in the hotteſt Parts of *America*, under the moſt inflaming Circumſtances, without the manifeſt Importation of it: And with Regard to the *Britiſh* Iſlands, the Accidents by which Contagion is transferred are often untraceable

(a) Novi quoſdam a crapula, aut exercitio immodico in hunc morbum incidiſſe, cum praeterea nemo circumcirca in tota regione aegrotavit; nimirum ſine prævio miaſmate latentia hujus mali ſemina, a nimio ſanguinis fervore commota et invicem aſſociata agglomerantur, facileque totam inquinant ſanguinis maſſam, & fermento ſuo inficiunt. *De Febribus* P. 118.

* Dr. *Fuller* has a remarkable Inſtance of a Perſon, who having taken a Drachm of Gamboge from an ignorant Preſcriber, after its violent Operation, fell into a Fever which terminated in the Small Pocks, at a Time, when it was not in all that Country, and when he had been no where elſe to take the Infection. *Exanthemat.* P. 188.

able. The learned and ingenious WERLHOF informs us, (1) from his own Knowlege, that a Girl, who had received a Letter from her Brother, then at ſome conſiderable Diſtance, infected with the Small Pocks, ſickened ſome Days after at *Hanover*, and infected others, when the Diſeaſe had not been there for ſome Years before. Now as *London* is never without the Seeds of this Contagion, and often greatly abounds with them, gentle Winds may tranſmit the variolated Part of our Atmoſphere to ſome Diſtance; tho' we know at preſent it has never been extended in that Manner acroſs the Atlantic Ocean.

The variolous *Primordia* and *Pabulum* then being certainly diſtinct Parts of Matter, tho' ſo ſimilar, as to be ſtrongly diſpoſed to unite, to the Increaſe of the former; as often as we are ſaid to have the Seeds of the Small Pocks in us, before actual Infection, it can only be true that they are virtually in us, as Grain may be ſuppoſed to exiſt in the unſown, but fruitful Field, to which the human Body, before Infection, correſponds here: while the animal Heat and Humours have a conſiderable Analogy with the elementary Fire and Moiſture, that concur to the Growth and Increaſe of the Grain, when the Seeds are conveyed into the Soil. I need ſcarcely obſerve to the phyſiological Reader here, that when I ſometimes call the variolous Principle *Seeds*, or the variolous *Pus* a *Ferment*, I do not literally ſuppoſe theſe inviſible Atoms either Seeds ſeparately,

(1) De variol. & anthrac. Not. 36. ad P. 16, 17.

ſeparately, or an animal Yeaſt compoundedly, nor even that they are not ſuch, as I am truly ignorant of their intimate Eſſence: but that I only uſe theſe Metaphors to illuſtrate their Obſcurity a little, by referring to certain analogous Proceſſes and *Phænomena* in Nature, which ſeem not quite ſo much concealed from us.

But after our continual Aſſumption, with many other Phyſicians, of the two Cauſes concurring to this Diſeaſe, it is but ingenuous to confeſs, that ſome others have mentioned no ſpecific *Fomes* of it; as the learned and elegant FERNELIUS conſiders a particular Diſpoſition of the Air as its ſole Cauſe, and conſents to its ſecond and third Infection of the ſame Subject. To ſuch conſiderable Authority however, it may be ſufficient to oppoſe that of long Experience, and to anſwer, that, if it were ſo in his Time, it is altered ſince, as *Moliere*'s Doctor ſays of the commuted Situation of the *Viſcera* ſince the Time of HIPPOCRATES: neither is it any Injuſtice to the Merit of FERNELIUS, to ſuppoſe this Diſeaſe better underſtood ſince SYDENHAM than before. But an ingenious Cotemporary, Dr. HAHN, goes ſtill farther in his *Ratio Variolarum* printed at *Wratiſlaw* 1751: in which, without denying the Exiſtence of this Contagion and *Fomes* in direct Terms, he is intrepid enough to aſſert, in Effect, their being inſignificant and unneceſſary to the Production of the Diſeaſe. His bold Syſtem briefly is, 'That the Small Pocks is not ſtrictly a Diſtemper, but as natural, and even as neceſſary, an Evolution of the

the Body, from the actual Extenſion and Multiplication of the extreme capillary and ſuperficial Arteries, as that of the Extruſion of the Teeth at their different Periods; of the Appearance of a particular Piloſity; of the Eruption of the *Menſtrua* and other Tokens of Puberty, at their ordinary Terms, or of any other corporeal Evolution.' Had the learned Author intended this *Hypotheſis* as a medical *luſus ingenii*, he had undoubtedly fulfilled the Purpoſe of an agreable Amuſement to his medical Readers; the Analogy between arboreſcent and animal Vegetation being very curiouſly preſerved; in which the Puſtules are conſidered as the Fruit or Berry extruded from the new Shoots, and appended to them by *Pedunculi*, or Stalks, paſſing thro' the Integuments. But as he ſets out with the Air of a ſerious Conviction of its Reality, we are at a Loſs to reconcile it with the Author's Reputation and Knowlege in his Profeſſion; and find it hard to conceive, how he could acquieſce in his own Evaſions of the Objections to his *Hypotheſis*; and particularly to the inſuperable Difficulties it is clogged with, from the indiſputable Facts of natural and artificial Infection: where we may obſerve by the Way, that the latter has certainly conduced to give us a more diſtinct Idea of this Diſeaſe, than we had before our Acquaintance with Inoculation.

Taking this peculiar internal Cauſe then for granted, from the moſt obvious Reflection on plain Appearances, and their conſtant Events, we ſhall endeavour to conſider its Quality, and even its

its Reſidence; Circumſtances not altogether as manifeſt as its Exiſtence. With Regard to its Reſidence, I had not the leaſt Thought of confining it to any Spot or Organ of the Body, till I obſerved, that the elder HOFFMAN was for fixing it, not in the Blood or Humours, but in a virulent Fluid contained in ſome obſtructed Tubes of the ſpinal Marrow, from the Spine and the Head being firſt formed in the *Uterus*. We ſhall not ſuggeſt any Soleciſm here, in this Phyſician's ſuppoſing ſuch a nervous Tubuloſity as Anatomy and Microſcopes * are incapable of diſcovering; ſince a diſſected and inſpected Nerve may be very inſufficient to give us an adequate Idea of its vital State, its Action, † its Permeability, and ſtill leſs of its Contents; and the nervous Cavities being once admitted, their poſſible Obſtruction will be a Conſequence. But were we to grant this ſpecific Situation of the variolous *Latex* or Source, (which Dr. HAHN terms a divine Detection of the true Myſtery of the Small Pocks) muſt we not alſo grant, that as many as were formed without this nervous Obſtruction, are neceſſarily void of the *Latex*, which is contained in no other Part, and are conſequently exempt from the Diſeaſe? And how will this ſpecific Situation of a variolous *Latex* quadrate with the Syſtem of variolous Evolution, which the Doctor ſuppoſes

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* I think, however, upon Recollection, *Leuwenhoek* aſſerts ſome very exquiſite Pores or Paſſages, diſcoverable by the greateſt Magnifier, in the ſpinal Marrow of an Ox juſt killed, and directly examined.

† See *Van Helmont*, P. 364.

the meer Reſult of that neceſſary Extenſion and Increaſe of the capillary Arteries, that ſhould be common to the whole Species, if not to the whole animal Creation, at ſome Term of their Accretion? Beſides, were this Diſcovery of the great HOFFMAN's certain and real, might he not obviouſly deduce it *a poſteriori*, from the violent *Lumbago* ſo frequently previous to the confluent Small Pocks, without any ſupernatural Penetration or Aſſiſtance? For my own Part, I find it eaſier to ſubſcribe to their Opinion, who ſuppoſe it eſpecially lodged in the circulating Blood, where it may probably be more concentered or diffuſed, in Proportion to its different Quantity and Energy in different Subjects.

Dr. VIOLANTE, whoſe *Latin* Treatiſe on the Small Pocks and Meaſles was publiſhed at *Dreſden* in 1750, has, without the leaſt Heſitation, and as little Proof or Argument, affirmed the Humour found in the narrow Cavities of the *Capſulæ atrabilares* or renal Glands (which Humour KEIL calls blackiſh, but HEISTER browniſh) to be the internal Cauſe and Nouriſhment of the Small Pocks, and of the Meaſles too. Hence the Uſe of theſe Glands, hitherto concealed from Phyſicians and Anatomiſts, would be to qualify their Owners to receive the external Cauſes of the Small Pocks and Meaſles, and to feed and multiply them by this Fluid; the Uſe of which, before this Diſcovery, was as obſcure, as that of its containing Glands, whoſe excretory Ducts are yet undiſcovered. But after the cloſeſt Attention

tion to this Novelty, I cannot imagine theſe Glands with their Fluid a more probable Receptacle and Fuel for the Small Pocks, than HOFFMAN's obſtructed Tubes in the ſpinal Marrow with their ſuppoſed variolous Fluid. For as theſe renal Glands in the Fœtus are always nearly as large as the Kidneys, and often larger; while in Adults they do not ordinarily exceed the Size of a *nux vomica*, and the Decreaſe of their Size is doubtleſs very gradual; it ſeems natural to ſuppoſe, that the different Quantities they ſecrete from the arterial Blood in the Infant and Adult, muſt be in ſome Proportion to their different Size and Cavities, in theſe oppoſite Subjects: Whence this Humour abounding more in the Child, proportionally, than in the Man, it muſt follow, from this Gentleman's Diſcovery, that the former would be ſubject to a greater Number of variolous Puſtules, with all their aggravating Circumſtances, than the latter; the very Reverſe of which is by much the more general Event. Beſides, this ſame atrabilious Humour, as VIOLANTE ſuppoſes it (though KEIL denies the Exiſtence of any atrabilious Humour) gives us a Notion of ſomething intenſely bitter, but HEISTER affirms it is of a ſweetiſh Taſte. Indeed we are ſurprized, upon the whole, that this *Neapolitan* Phyſician to the King of *Poland* did not conſider theſe Circumſtances as ſome Objections to his Opinion of theſe glandular *Viſcera* and their Contents: Since they would incline us to imagine this Humour rather oppoſite to the Small Pocks, than genera-

tive of them, as he terms it. But were we even to admit its being the particular, or principal, Matter of their Increaſe and Nutriment, it would ſeem that thoſe Glands which ſeparate ſo much of it from Infants, and ſo little, ſometimes none at all of it, from Men, was more likely to be a ſalutary Contrivance of Nature, for preſerving the Blood of Children in a more depurated State, in order to leſſen their Danger from this Infection at their tender and delicate Stage of Life, than a Receptacle to cheriſh and augment theſe Diſeaſes in them; which Opinion would alſo be countenanced from the greater Number of Puſtules, and more violent Symptoms, in thoſe Bodies, in which this Secretion was greatly diminiſhed, or had totally ceaſed. A Diſcovery of the excretory Ducts of theſe Glands had been a truly valuable one, as it would have led to a Knowlege of their real Uſe, and that of their Contents. But as the Caſe now ſtands, it ſeems not more clear, that they are the Receptacle and Seed-bed of the Small Pocks, *&c.* than that the *nigrum Pigmentum* of the *Choröides* ſhould be their Nutriment, and the very minute Glands which ſeparate it, be their Receptacle. We acknowlege however, that this Conceit has given us a little Curioſity to inſpect, or to be informed of, the State of the renal Glands, in Subjects dying of the Small Pocks: And we alſo confeſs, this Author has rather taken this Uſe of theſe Parts for granted, than aſſumed any great Merit from diſcovering it.

Such

Such as have concluded ſome *Labes* or Impurity of the menſtrual Blood, to be the internal Cauſe of the Small Pocks, have alſo concluded a peculiar Diſpoſition of the Air, or any inflaming Accident,* ſufficient to effect the morbid Explication of it, without any peculiar Contagion. Many Moderns, agreeing, in this Reſpect, with the *Arabian* Writers, have conſidered the Diſeaſe as an Effervescence and Deſpumation of the Blood, neceſſary to its Defæcation, and compared it to the Tranſition of Muſt into Wine. Undoubtedly, as human Blood, it is the *Subſtratum* or Soil of this Malady for once; tho' not from any peculiar Malignity of the menſtrual Blood, which it is abſurd to ſuppoſe the plaſtic Wiſdom of Nature would malignantly employ, for the Conſtitution of her nobleſt ſublunary Creature: And which, if ſhe did, ſince the Effect muſt be as extenſive as the Cauſe, muſt inevitably ſubject the whole Species, who are ſimilarly conſtituted from it, to an indiſcriminate and early Attack of the Small Pocks without Contagion, a Conſequence manifeſtly contrary to irrefragable Experience. Yet from ſuch a Notion it is not improbable, that the *Chineſe* Phyſicians recommend that peculiar Preſervative from this Diſeaſe, mentioned by DIGBY and by HARRIS; which is no more than ſqueezing the Blood from the Navel-ſtring of the Infant

* This naturally reminds me of an odd Conceit in a Gentlewoman here, who was very poſitive that her Son, of ſix or ſeven Years old, caught the Small Pocks, which had been favourable, by a Fall thro' one Story of a Houſe then building in the Neighbourhood.

fant outwards, before the Ligature is made. Theſe Phyſicians are highly commended for their Abilities by ſome of the hiſtorical Miſſionaries, and particularly for their extraordinary, and, to me incredible, Prognoſtics from the Pulſe: But certainly it argues a groſs Ignorance of that Circulation on which the Pulſe depends, to ſuppoſe, that all the variolable Particles of the Infant's Blood ſhould be confined to the Conduit of the umbilical Chord.

As we ſhall venture then to ſuppoſe this congenial *Fomes* pretty equably diffuſed through the Blood, ſo we think it likely that it is not impreſſible by any different Contagion, and very rarely, if ever, excited by the Cauſes or Proceſs of other Diſtempers; Since notwithſtanding we cannot be certain, that the more humoral Part of it may not accidentally co-operate in ſome febrile Caſes, it has never been known that any acute or chronical Diſeaſe terminated in this, when the Patient has been certainly ſecure from variolous * Contagion. Neither does it appear to be ſingly morbific, as Experience abundantly proves, that even a mortal Quantity of it has remained very indolently in many remarkably healthy Conſtitutions, for many Years, before its fatal Conjunction with the external Cauſe. Now, though to inveſtigate, with any conſiderable Preciſion, what *the whole* of this *Fomes* is, be a Difficulty little inferior to the Defiguration of the inviſible Seeds of its correſponding Contagion; yet Experience

* See however Note p. 45.

perience and Reflexion contribute to ſuggeſt ſome probable Conjectures, concerning thoſe particular Principles in our Compoſition, which are moſt ſuſceptible, and further conſtitutive, of thoſe Seeds. *Boerhaave* ſpecifies the (1) *Salino-oleoſe Temperament*, as diſpoſed to the ſevereſt Degrees of the Small Pocks. Thus very bilious Conſtitutions, *cæteris paribus*, have been often obſerved to be more violently affected by it; and Chemiſtry inſtructs us, that Bile has a conſiderable Proportion of lixivious, and ſome volatile Salt and Oil, in its Compoſition. We are not a little obliged to the late ingenious and indefatigable Dr. LANGRISH, for his *Analyſis* of the human Blood, and Urine in a healthy, and in an * inflammatory State; by which we obſerve, that the volatile Salts and Oil were conſiderably increaſed in the latter State, and the Lymph ſomewhat abated; and that in Proportion to the Mitigation of the Symptoms, the Urine was more impregnated with thoſe *ſalino-volatile* and ſulphureous Parts. Now if we ſuppoſe (which is not improbable) that the variolous *Pabulum* chiefly conſiſts of thoſe moſt active and inflammable Principles, the Suppoſition will be countenanced not a little, by the general Obſervation of Children's (whoſe dilute, ſimple, aceſcent Food may be deemed to furniſh but a ſmall Proportion of theſe high Principles) being infected with the lighter Degrees of this

(1) Aph. 1397.

* Mr. *Boyle* acknowleges the human Blood, which he analyſed, was taken only from healthy Perſons, who bled from Cuſtom.

this Diſeaſe; though undoubtedly other Circumſtances may concur to this. It will be further corroborated too from our obſerving, that among Adults, thoſe of a lax Fibre and moiſt Habit, and ſuch as have been rendered pale and low by previous Hæmorrhages and Intermittents (provided theſe laſt have left no Obſtructions of the *Viſcera*) are generally viſited with lighter variolous Symptoms, than others who are remarkably vigorous and plethoric; or if thin, at the ſame Time, ſallow, dry and rigid: Since we find from thoſe uſeful *Analyſes*, that the ſound Urine, which may be chiefly ſeparated from the *Serum* (though probably charged with ſome recrementious Abraſions from the Fibres and fibrous *Cruor*) contained almoſt a third Part leſs volatile Salt than the Blood taken altogether; though full four Times as much fixt Salt, which Dr. LANGRISH rationally concludes, from its ſenſible Reſemblance to * Sea Salt, to depend chiefly on that Proportion of it uſually added to our Food.

The ſame Suppoſition will obviouſly account too for the ſeverer Infections, that happen after indulging on high Meats and Sauces, and rich ſtrong Liquors, which may be conſidered as ſupplying an acceſſory Nouriſhment to the Diſeaſe; or after heating much by violent Exerciſe, or long Inſolation, which tend to exalt that already in it; while they produce an extraordinary and un-

* This was eſtabliſhed beyond Doubt, by Mr. *Boyle*'s diſſolving Leaf Gold immediately in *Aqua fortis* without Heat, on adding ſome Grains of the fixed Salt of human Blood to the Menſtruum. Vol. IV. P. 171.

unwholeſome Waſte of the Lymph ſo neceſſary to its Dilution. And here we could have wiſhed, in order to a better Eſtimation of what Proportion of the palpable variolous *Fomes* the *Serum* in ſound and in inflamed Bodies may contain, that the Doctor had further obliged us with its chemical *Analyſis* diſtinct from the *Craſſamentum*, and before it became extravaſated and excrementitious as Urine; which, from a ſenſible Difference in Smell and Taſte, muſt be loaded with a greater Proportion both of ſulphureous and ſaline Parts than the circulating *Serum*: one Purpoſe of this Excretion very probably being to prevent an inſalutary Accumulation of theſe Principles in the Maſs, and to make room for a further Dilution and Attemperation of it. It ſeems rational however to infer, from the ſmaller Quantity of them even in the excrementitious *Serum*, that in its ordinary State it is pregnant with a leſs Proportion of this *Fomes* than the red Globules; which from their greater Surface, and more ſolid, tho' yielding and fibrous Contexture, ſeem to conſtitute a fitter Soil for the Reception, as well as Nouriſhment, of the Seeds of this Contagion. The more ſimple and aqueous Part of the *Serum* may not improbably attemper and even reſtrain their irritating Effects; but the more it is inclined to a high alcaleſcent, bilious Dyſcraſy, it muſt be the leſs adapted to ſuch a Purpoſe.

But further, as the Solids and Fluids are compoſed of the ſame Principles, it may be aſked, whether the fleſhy and vaſcular, the nervous, and

even bony Fibres, contain any Portion of this *Fomes?* And this the rather, as Dr. BUTINI, in his *Traitè de la petite Verole, &c.* (1) aſſerts it to reſide in the Solids, from its frequent long Dormancy in the Subject. But if the Suſception of the variolous *Miaſma* appears conſtantly neceſſary to excite and actuate it, the Term of its Dormancy, or Inaction, can ſuggeſt but little as to its preciſe Reſidence. However, as the Solids were at firſt in a State of Fluidity, and continue to be nouriſhed and repaired by the Blood, it ſeems reaſonable to infer, that they may contain ſome Share of it. But as the common Principles of both vary in their Proportions, and very manifeſtly in their Modification and Conſiſtence, before their Separation by Fire, it ſeems equally reaſonable to ſuppoſe too, that in the lighter and even middling Degrees of the Small Pocks, thoſe Particles, now contributing to conſtitute the Solids, which, in their fluid State, were aſſimilable by the contagious Cauſe, are no longer ſo in their more fixed and reſiſting Form. Yet muſt we admit, that even in a ſound Condition of the human Syſtem, there is an inceſſant and reciprocal Commutation of the ſame Particles into a fluid and ſolid Conſiſtence. Our Food muſt be reduced to a conſiderable Degree of Fluidity to become Aliment; which muſt in Part be conſolidated afterwards, to be effectually applied to the conſtant neceſſary Repair of our Machine; and the abraded Particles of our Solids muſt be attenuated to an

(1) Page 9.

an exquiſite Fluidity, to be expelled thro' the inviſible Outlets of our Surface. In ſome morbid Caſes the Fluids have been found to concrete, the Veſſels to oſſify; the very Brain has appeared (1) partly bony, partly lapideſcent, and a Piece of it ſawed off and infuſed in Spirit of Salt, conſiderably diluted, became nearly as flexible as Whale-bone. This had been a Cow's Brain, was ſent to the Royal Society, and ſeen by many here. In others the Fibres colliquate and melt, and the (2) Bones have grown ſoft and flexible. And thus here, from the intimate Relation and Intercourſe between the nouriſhed and nouriſhing Parts, if the latter abound exceſſively with this Fuel, the Conſequence may not only prove an extreme and fatal Attrition of the red Globules, whence the Purples, or bleeding Pocks, with all their dreadful irremediable Symptoms; but even an eroſive Colliquation of the Solids may ſupervene to the Production of Gangrenes: and if a Patient in this horrid Situation could exiſt long enough for it, a *Caries* of the Bones might enſue.

Thus much may perhaps but too prolixly ſuffice to infuſe ſome Idea of the humoral Principle and Fuel of this Diſeaſe. But beſides this it muſt be confeſſed, there is ſomething much leſs inveſtigable in the human Syſtem, ſome impalpable Eſſence or Quality, the Expulſion or Extinction of which is the eſpecial Cauſe of our Privilege from a ſecond variolous Attack. Common Senſe

(1) Dr. *Simſon*'s Inquiry, P. 259, &c.
(2) Ephemer. German.

ſufficiently inculcates, that whatever preſent Alteration this Diſeaſe may effect in the Proportions of thoſe Principles compounding the Blood, the Principles themſelves muſt, in ſome Degree, continue; and in a ſhort Time moſt probably reſume their wonted Proportions; ſince a material Defect of the active Principles would as certainly be morbific as their Exceſs. A Recourſe to the uſual Way of living, the ſame Tone and Action of the Solids, the ſame concoctive Powers, and the ſame Strainers muſt elaborate Blood of the ſame *Craſis* and Temperature. Yet all this Experience demonſtrates inſufficient to regenerate the ſame Diſeaſe in the once infected Subject. Is the material *Fomes* then but the principal Vehicle of this connate *Vapour* perhaps, which, like the Contagion that impregnates it, eludes all Inveſtigation? Is the volatile *Fomes* that inſcrutable Eſſence, which ſpecifically diſtinguiſhes the human Blood from that of all Animals, which affords the ſame Principles on a chemical *Analyſis*, and yet is not the Subject of this and ſome other Contagions? Has it any conſiderable Analogy with the Air that is fixed and quieſcent for a Time in all our containing Parts; and is it inflamed or rendered elaſtic by the Spark of Contagion? Is it, however inconceivably, concentered in the *Ovum*, or commixed with that volatile Spirit of the *Semen*, which probably pierces and fecundates it? and is it attracted, during the Formation of the *Fœtus*, by the moſt active Principles of its Fluids? Or is it only a meer Quality, depending on ſuch a peculiar

culiar Mode or Degree of Coheſion in the Maſs, as it never exactly reſumes again, after its having been once unravelled by this Diſeaſe? After the utmoſt Suggeſtions I muſt be content, methinks, to treaſure up its explicite Nature among my numerous *Incognita*: and apprehend a much better Penetration than mine may ſafely preſume with the learned WERLHOF, (1) that it will never be ſatisfactorily explained.

With Regard then to the humoral Part of the *Fomes*, a ſagacious Phyſician may generally form a reaſonable Eſtimation of its Quantity in different Habits and Circumſtances, and frequently leſſen and attemper it by proper Methods. But in Reſpect to the Portion and Energy of this evaneſcent inſcrutable Part of it, the moſt judicious may be miſtaken; as a fatal Infection has ſometimes occurred in Subjects, whoſe Complexion, Age and Temperament ſeemed happily circumſtanced for the Small Pocks. It may be affirmed however, that this happens but rarely, as the humoral *Fomes* ſeems as indiſpenſable to the Diſeaſe as the more latent one; and it is reaſonable to ſuppoſe they are generally rather proportional.

But whatever this Fuel may conſiſt of in the Aggregate, the whole, we are certain it abounds conſiderably more in ſome Conſtitutions than in others: Children at the Breaſt and the *Fœtus* have died from its Exceſs: ſome few in the utmoſt Vigour of their Lives have had a very gentle Diſeaſe from its Paucity and Mildneſs; and WERLHOF

(1) De variol. P. 20.

WERLHOF informs us, (a) from his own Knowlege, of a *German* Peaſant, who paſt thro' it with great Facility at the Age of eighty.

Could we then, without a violent Conſequence, wholly expell or eradicate this Fuel from the Habit before Contagion, it muſt be juſt equivalent to an effectual Antidote againſt it. But tho' the Divine Omnipotence has not permitted us thus entirely to elude thoſe Shafts that fly by Day and Night, His infinite Compaſſion has indulged Mankind a different Method of having them pervade our Bodies with very little Trouble, comparatively ſpeaking, and ſtill leſs Fatality. And indeed it is no ſmall Happineſs that we can form, upon the whole, a clearer Idea of this *Fomes* which we contain, and can, in ſome Meaſure, diminiſh and attemper; than of the external Principle, whoſe admitted Quantity we cannot aſcertain, by natural Infection at leaſt; and whoſe Quality we cannot perhaps alter at all, or not, without preventing its indemnifying Operation. It ſeems further probable, that the Quantity and Energy of this inherent Principle moſt eſſentially conſtitutes the Degree and Character of the Diſeaſe: For tho' different Conſtitutions of that Air we continually imbibe, may be diſpoſed more or leſs to propagate, or to enforce, the Operation of this Contagion, as the State of our Solids and Fluids may be variouſly affect-

(a) Ut nuperrime obſervavi in ruſtico octuagenario, qui toto fere vita ſaniſſimus variolas diſtinctas egregie in iſta aetate exſuperavit. *De variol.* P. 21.

affected by them; yet Inoculation has abundantly demonſtrated, that * an inſenſible Quantity of the very ſame infectious Matter effects a large Aſſimilation in ſome Bodies, while a ten-fold Quantity has not produced the tenth Part in others. Where this *Fomes* then is naturally ſmall and mild, the variolous *Primordia* muſt be aſſiſted by ſome very malignant Quality in the reigning † Conſtitution; or the Diſeaſe muſt have been treated very abſurdly, to produce a violent and anomalous Small Pocks. Where it is very copious and energic, the mildeſt Seaſon and ſimpleſt Contagion can ſcarcely fail to excite a ſevere Degree in the natural Way. We may well then recommend a careful and rational Regulation of this Principle to every Inoculator.

Hoc ſaltem minuas, hoc tu compeſce catena.

And if Inoculation afforded us but this ſingle Advantage, it muſt certainly be a ſufficient Enforcement of the Practice.

As a Matter of ſome Curioſity, we ſhall cloſe this Section with obſerving, that the Circumſtances of a ſpecifically morbid *Pabulum*, and the Kindling and compleat Extinction of it by a ſpecific Contagion, ſeem almoſt peculiar to this Diſeaſe

* See Sect. VII.

† This ſeems to have occurred here in 1759, when the Small Pocks were more than uſually fatal; and Inoculation was ſomewhat leſs ſucceſsful than uſual, very probably from the ſame Conſtitution. I have heard of about 10 or 12 miſcarrying under it, and I then loſt a Negro, whom I inoculated, belonging to Mr. *Stead* in *London*. He was about 20 Years old.

Diſeaſe and the * Meaſles, ſince we have the beſt Aſſurances that Perſons have been a ſecond and third Time attacked with the Plague, and twice even in the ſame Seaſon. We have ſeen an acute Fever however on the Continent of *America* in 1732,† which, under a ſimple rational Treatment, deſtroyed about the ſame Proportion with the Small Pocks, one in ſix or ſeven, taken all together; and we are poſitive that, on a ſecond Viſitation from it in 1739, not one Perſon who had the former was affected with this, and very few others eſcaped it. The Symptoms in both were entirely ſimilar, tho' its different Treatment the laſt Time conſiderably aggravated them, and raiſed the Mortality to that of a ſevere confluent Pock, which ſome have thought to equal the Havock of the Plague. If any other acute epidemical Fevers obſerve the ſame Diſtinction, it ſeems to have been little adverted to by medical Writers; and this may be partly referred perhaps to that Diſproportion between the Brevity of Life, and the Extent of medical Diſquiſition, which the contemplative HIPPOCRATES (a) hints at, as one Cauſe of the Defect of the Art.

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* Tho' this may be the Caſe too of the Swine and Chicken Pocks, and a few other febrile Eruptions, which never return again, we ſcarcely conſider them as Diſeaſes, ſince Phyſicians are very ſeldom called in to them. The Whooping Cough, frequently epidemic amongſt Children, to the beſt of my Recollection, never viſits the ſame Patient a ſecond Time.

† By all Accounts it had been there 17 Years before; all the Survivors who then had it, eſcaping it in 1732, and 1739. I had that of 1732.

(a) Ὁ βιὸς βραχὺς ἡ δὲ τέχνη μακρὴ. L. 1. Aph. 1.

SECTION III.

Of the Progreſs and Operation of the Contagion.

THE Coalition of the variolous *Effluvia* and *Fomes* immediately conſtituting this Diſeaſe, the Title of this Section might naturally incline the Reader to expect a Deſcription of its ordinary Symptoms and Progreſſion. But this having been moſt happily effected by the great SYDENHAM; being tranſcribed from him by ſome, with very little Improvement, and by others, not without Depravation, a Repitition of it here muſt prove the *Crambe centies cocta*, and even diſguſt a diſcerning, medical Reader. We ſhall therefore rather invite ſuch to an attentive Survey of the Progreſs of this Contagion through the Habit, in the moſt uſual Modes of its accidental and voluntary Admiſſion; and thence ſurmiſe, at leaſt, its earlieſt Impreſſions on the Blood, before they are conſiderable enough to manifeſt the Diſeaſe. Now tho' our Knowlege of the Circulation, and a tolerable Acquaintance with the animal Oeconomy, may furniſh ſome Idea of its Reception and Rout, its Manner of

Operation can only be conjectured from its ſenſible Effects.

Suppoſe the variolous *Effluvia* then, in the moſt uſual Rout of accidental Infection, conveyed into the Stomach with the *Saliva*; it has not been known, from its immediate Effects, to be a Poiſon *per ſe* affecting the * Membranes: it excites no Irritation there, nor was the Imbiber ſenſible of its affecting the Organ of Taſte. The uncertain Quantity imbibed was, however, comparatively ſmall; it had not yet arrived at the Soil for its Propagation, which ſeems to be the Blood itſelf, and not the *Saliva* ſecreted from it. We cannot ſuppoſe the Warmth of the Stomach likely to extinguiſh its Activity. From the periſtaltic Motion, and very gradual *Syſtole*, of this Organ, it will be detruded with ſome of its Contents into the *Duodenum*, where it meets with the Bile and pancreatic Juice; the former of which being peculiarly impregnated with the active and ſtimulating Principles of the Blood, will ſcarcely leſſen its Viroſity. But as yet it has only met with ſuch a Portion of this Fluid, as is inſenſibly effuſed into the alimentary Tube to aſſiſt in Chylification, and for other oeconomical Purpoſes: and now being in its Progreſs blended with the Chyle, it may probably produce ſome Variation in its Texture, according to the Quality of its Contents, which ſuggeſts the Prudence of a due Regard to the Diet of Perſons in the Way of Infection. Being admitted, with the new Chyle con-

* See P. 28.

containing it, within thoſe exquiſitely minute Orifices of the Lacteals, which are ſaid to elude the Inſpection of the beſt Microſcopes, we will ſuppoſe it to receive but little Addition or Exaltation from the Lymph (in its ſimpleſt healthy State) with which the Chyle is diluted before its Arrival at the thoracic Duct; thro' which gradually riſing it is inſtilled with its involving Chyle into the ſubclavian Vein; and from thence by a ſhort Rout conveyed thro' the deſcending *Cava* to the right Auricle and Ventricle of the Heart. And now being in the Way of Diffuſion thro' the Maſs, if it finds a conſiderable Quantity of conſtitutional, or adventitious Fuel for its Increaſe, we may well exclaim,

Heu quantas acies ſtragemque ciebit!

But it may be obſerved, this is not often very haſtily effected, as theſe morbid Seeds, like thoſe of Vegetables, generally take ſome Term to remain in the Soil before they germinate, and attract that Nouriſhment, which is to multiply them more or leſs.

If we ſuppoſe the Infection wholly conveyed with the Air into the *Trachea*, the Windpipe, it will be applied to the pulmonary Veſicles, admitted into the Blood with the blended Air, and thence be conveyed to the left Ventricle of the Heart by the pulmonary Vein, a much ſhorter Rout than that by the alimentary and chyliferous Paſſages: whence an earlier Aſſimilation might be expected, ſuppoſing the Poiſon admitted thro' the *Oeſopha-*

gus to receive no additional Activity from the Heat of the Stomach and Inteſtines. As the Moment of receiving the Contagion by the Breath is ſeldom adverted to, we cannot ſay, whether it is ſufficiently irritative to excite a Cough, by its immediate Contact with the Membrane of the *Trachea*, or the Veſicles, which are leſs defended by a *Mucus* than the Stomach and Inteſtines. Were it capable of producing any ſuch Inflammation on the unwounded internal Surface of the Lungs, as it does on the inciſed *Cutis*, we might too reaſonably apprehend a bad Event from it in ſuch a vital and inquieſcent Organ. But we had already preſumed it was not a Poiſon immediately affecting the Membranes; ſince their frequent Irritations, on the actual Exertion of the Diſeaſe, ſome Days after Infection, are moſt probably owing to the heterogeneous *Craſis* of the variolated Blood, the different Secretions from which will be correſpondently irritative.

Were we to ſuppoſe the Infection received by the Smell ſo entirely, that no Part of it deſcended either into the *Oeſophagus* or *Trachea*; tho' it has a particular Scent, we do not find it irritative enough to excite ſneezing; nor ſo pungent as the inviſible *Effluvia* of volatile Spirits or Salts. The Fibres of the olfactory Nerves are nevertheleſs evidently affected: yet ſince we can conceive, that the inſorbing Veſſels in *Sneider*'s Membrane may convey the Contagion to the Blood, let us ſuppoſe it ſo for the preſent, to diſtinguiſh humoral from nervous Infection, for which there

is probably ſome practical Reaſon. As it will be gradually diffuſed hence thro' the Jugulars and Subclavians to the *Cava* and the Heart, there may perhaps be little particular in the Infection, meerly of the Blood, this Way ; except that the firſt Impreſſion, being made on this very ſenſible Membrane, may produce a more than uſual Proportion of Puſtules here, which muſt be troubleſome at leaſt in the Courſe of the Diſeaſe, from their affecting Reſpiration, and Deglutition or Swallowing, in Conſequence.

As Inoculation may juſtly be ſuppoſed the moſt immediate and ſimple Manner of infecting the Blood, we obſerve, that in order to it, a very ſlight and ſuperficial Wound or two is made, which is irritative of itſelf, as ſome nervous Fibres are divided and expoſed. The Matter infuſed coming into immediate Contact with the Orifices of the divided capillary Veſſels and their Contents, by firſt altering and affecting theſe, muſt make the little Diſcharge irritate the Orifice more, and diſpoſe it to a more ulcerated State, than the unaltered Fluids would in ſuch a ſimple, ſuperficial Wound. This Circumſtance will naturally be attractive of a more than uſual Afflux of Humours to the infected and unreſiſting Part : and accordingly we obſerve a little Heat and Itching about the Inciſions, conſiderably before any other Complaint. The Poiſon is, or ſhould be, conveyed into the moſt ſuperficial Capillaries, where the Circulation is ſloweſt; the Number of circulating Globules comparatively few ; their Size probably

bably comminuted from Subdiviſion, and the Degree of Heat but moderate. Its Diffuſion through Veſſels ſo circumſtanced muſt be attended with a very gradual Aſſimilation; and it is not ſeldom found, for ſome Time, ſo very confined and local, that a Tingling to the Extremity of the inoculated Member is perceivable, a few Days before any ſuch general Laſſitude, or erratic Fluſhings, as ſignify its Operation on the whole Maſs. This is moſt probably owing to the earlier Alteration of the Fluids in the more immediately communicating ſuperficial Capillaries, twitching their nervous Fibres; and may prove one Means of inviting a greater Proportion of the future Puſtules to the firſt infected Limb; a Part which, however neceſſary, is not eſſentially vital; but which, on this Occaſion, by continually and equably ſoliciting the morbid Effects from thoſe which are ſo, may often conduce to the Preſervation of Life.* And this (a) ſlow and gradual Diffuſion of the variolous Matter thro' the Maſs, is likely to render the Habit more pliable to the Diſtemper, by its not cauſing ſuch a tumultuous and ſudden Alteration of the Blood, as muſt greatly endanger the Patient; all ſudden Changes in the Habit, whether from Air or otherwiſe, being ſtigmatized as perilous by HIPPOCRATES long ſince.

As

* Thus the Effects of the very ſame morbid Cauſe, ſuppoſe that of the Gout, which are ſo often mortal, when exerted on a vital Organ, prove only painful, and not ſeldom ſalutary, on the Extremities.

(a) Το ὑ κατ ὀλιγον ἀσφαλες. L. 2. Aph. 51.

As I have heard ſome Phyſicians doubt, and others deny, the Eruption of the Small Pocks on any of the *Viſcera*, moſt of which have their ſuperficial *Spiracula* or Pores, as well as the Teguments; and which *viſceral* Eruption there is ſo much Reaſon to infer, from the Puſtules we can diſcern within the Mouth, the Noſe, and beyond the Palate, in the confluent Diſeaſe: to put this important Matter paſt all Doubt, I ſhall cite the Teſtimony of an Eye-witneſs to the Certainty of it, upon the Diſſection of variolous Bodies; who, after quoting FERNELIUS and PAREE as teſtifying the like Appearances, declares he has ſeen one half of the Lungs deſtroyed, and the Guts, eſpecially the great ones, gangrened in Conſequence of the manifeſt variolous Puſtules there. His own Words are *Ipſe quoque mediam pulmonis partem variolis exeſam deſtructamque hiſce oculis vidi; ſicut etiam inteſtina omnia, et præcipue craſſa, plena variolarum puſtulis manantibus, in quibus jam gangræna aderat.* VIOLANT. *de Variol. et Morbill.* p. 71. Theſe horrid Appearances were from accidental Contagion. And here does it not ſeem clearly probable, I had almoſt ſaid evident, that Contagion communicated ſolely through a very ſuperficial Wound into the Skin (which becomes a running Ulcer from the Matter applied) is much leſs likely to produce this Eruption on the Bowels or any vital Organ, than that Contagion which makes its firſt Impreſſion on the Brain, the Lungs, or the Stomach? Indeed when I have ſeen the Adult inoculated, ſometimes under a very conſiderable

derable Eruption, very ſore and tender, yet declaring themſelves perfectly free from the leaſt inward Sickneſs, I have generally aſcribed it to a total Abſence of any Eruption within, among the ſofter, hotter, more humoral and feculent Parts. This I have alſo imagined to be the Caſe of many who ſurmount a natural Coherence, and of the few who emerge thro' a natural Confluence. But the very rare Diſſection of Bodies ſinking under the more fatal and loathſome Degrees of this Diſeaſe, renders the Exiſtence of ſuch Appearances more controvertible.

All this may poſſibly ſuffice to inſtill a general Conception of the Commencement, Progreſs, and Circle of Infection in its different Modes; but its ſpecific Action on ſome Parts of the Blood; its Co-operation with others; the Reſiſtance and Dilution it may encounter in peculiar Habits; and every Conflict between the Venom and the vital Principles, are neceſſarily latent, both from the inviſible Nature of the Contagion, and our Ignorance of the perfect Texture, Coheſion and Activity of the infected Particles. Were the Angel in *Milton* ſuppoſed to purge *Adam*'s viſual Ray, permitted for a while to endue us with a ſupernatural Intuition into the intimate Compoſition and Motion of Subſtances, and then preſented a living and tranſparent Man for the Object of our Sight and Contemplation; when we ſaw the vital Machine in perfect Order compleatly exerting every corporal Function, and ſubtilizing ſome Part of our Fluids, 'till they attained the requiſite

Qualities

Qualities to miniſter between Mind and Matter, and became indiſpenſable to the Exertion of Intellect: And when we ſubſequently obſerved the gradual and various Alteration of the Blood, from the viſible Operation of theſe infectious Atoms; and diſcerned the ſubſtantial Reaſon, why the formerly nutritive Particles became depredatory on the Solids, and the nervous Secretion ſo depraved, as to eclipſe the *divinae particulam auræ*, the human Soul: And at laſt diſtinctly ſaw every oeconomical Effort, by which all ſuch morbid Alterations were effaced, and the animal Functions and rational Faculties reſtored to their former Sanity and Conſiſtence; as the combined Art and Wiſdom of our whole Species would be unequal to the Imitation of ſuch exquiſite Contrivance, the tremendous auguſt Proceſs muſt equally illuſtrate the Glory of the omniſcient, omnipotent ARTIST, with the Firmament and Stars themſelves. But ſince our natural Perceptions are inadequate to ſuch a Scrutiny; and the divine Purpoſe of our brief Duration here renders it unneceſſary; let us try if an Attention to the ſenſible Conſequences of the variolous Principles, may not at leaſt afford us ſome very analogical Idea of their Operation.

Though the Doctrine of a vinous-like Fermentation in the animal Fluids is, upon the whole, perhaps juſtly exploded; as the frequent arbitrary Suppoſition of it, and the aſcribing a particular fermenting Power to moſt of the viſceral Secretions, appear to ſuggeſt little rational In-

dication and Practice: yet there certainly is a ſtriking Reſemblance of it in the *Apparatus* and Proceſs of this particular Diſeaſe. The Particles of the Yeaſt conveyed into and agitated through the fermentable, but hitherto unfermented Liquor, attract, or are attracted by, certain Particles of it; from whence an unuſual Degree of inteſtine Motion is generated in it, after a certain Period, which is ſomewhat accelerated by Heat, and retarded by Cold, or other Accidents; from which augmented Motion the Liquor becomes hot, turbid and rareſcent; and after the Expulſion of ſome palpable Parts, and much Air to the Surface, the Motion ſubſides, the remaining Liquor becomes fine; nor is the Yeaſt, thence augmented and ſeparated, capable of renewing the Fermentation in that ſpecific Liquor, tho' it is, in another unfermented Maſs of the ſame Kind. The Analogy between this and Inoculation, particularly, where the palpable Ferment applied is augmentedly returned; and where the Air expelled with the Yeaſt ſimilarly anſwers to the connate and perhaps aerial *Fomes* (which is very rarely, if ever, regenerable in the ſame ſubject) is too obvious to require any Inforcement. Doubtleſs it was this ſtriking Reſemblance, that prompted SYDENHAM, who was no Idolizer of *Hypotheſes*, to term the Eruption and Suppuration of the Puſtules, a Deſpumation of the Blood. And as exceſſive Fermentation leaves the impoveriſhed vegetable Fluid unqualified to nouriſh or to exhilarate; ſo exceſſive Aſſimilation too often extinguiſhes

guiſhes the vital, or deſtroys the ſalutary, *Craſis* of the Humours.

Now notwithſtanding the Authority of BELLINI, (a) and other eminent Phyſicians, I am incapable of conceiving, that this Infection of the Blood produces any extraordinary Sizineſs or Coheſion in it; or that it operates on it, as Acids do on Milk, by coagulating and hardening one Part and attenuating another, which is the ſame Thing as ſeparating its *Craſſamentum* and *Serum*. It ſeems to me, on the contrary, rather to divide the red Globules, and poſſibly to impair their perfect Sphericity and Smoothneſs; whence their Circulation through the contractile Veſſels becomes more irritative. Thus profeſſor SCHACHT calls the (b) Blood in this Stage thin, florid, fuſed, and ſharp. And this to a certain Degree, in ſome cold and ſluggiſh Habits, will be ſo far from aſſuming a morbid Appearance, in its Infancy, that the Perſon will ſeem more than uſu-

 ally

(a) Ille igitur dolor pulſatorius (ſcil. capitis in variolis) non ab aucto motu aut quantitate ſanguinis poveniet; ſed vel a lentore ſubitam trajectionem prohibente; vel a rarefactione & quaſi fervore, quo ſubita illa trajectio ſimiliter impediatur: vel ab utroque ſimul, ſeu, quod idem eſt, a fermentatione quadam ſanguinis, qua fiat, ut ſolvatur a duriori liquidius, atque ita hoc rareſcat, illud ſubſiſtat magis.—Eſt igitur ſimiliter febris variolarum vitium in qualitate ſanguinis, qua ſolvatur, & fit partim lentior, partim liquidior.— *De Febribus*, *Prop.* xxx. But it is obſervable, that, in accounting for the Symptoms, he is obliged to recur much oftner to the Fuſion than the *Lentor*. It is even affecting to obſerve, how oddly Dr. *Willis*'s Hypotheſis of coagulated and congealed Blood in this Diſeaſe correſponds with his Hiſtories of the exceſſive Hæmorrhages in it.

(b) Sanguis tenuis, floridus, diſſolutus, acer.
Inſtit. medic. pract. P. 39.

ally alert and lively, of which I have positively seen some indubitable Instances; and I have known such a slight Cough, as might be attributed to a *Lentor* from Cold and a checked Perspiration, (but in which the Lungs were justly supposed entire and sound) go off entirely within 48 Hours after Inoculation; to which it should not be denied, that the general Caution and Regularity of Persons after it might contribute: but as the Cough vanished, it was inconteſtable, that Inoculation furnished nothing towards its Increase or Continuance, which an increased Viscidity of the Blood very probably must. I knew a Gentleman too between 40 and 50 Years of Age, having been a Valetudinarian for the two or three last, (and had probably had some glandular Obstructions of the *Viscera*) who declared in Company one Night, that he felt himself much better than for a considerable Time before, and, as he expressed it, entirely well: the next Day he was seized with an exquisite *Lumbago*, which terminated in a violent Degree of the Small Pocks, that proved mortal the eighth from Seizure. Dr. Morton himself acknowleges, that this Poison is a hot, acrid and colliquative one; tho' his Practice, by the Way, was a pretty odd Method of opposing such a Poison's Effects. Lister observes, that in the highest Species of the Small Pocks, the Fusion of the Blood was such, that, after it was cold, the slightest Touch of a Feather would move and divide it like Water. Boerhaave affirms that in the first Stage the Blood is remark-

remarkably bright and florid. In ſhort, the copious, and ſometimes profuſe Hæmorrhages; the irregular Eruptions of the *Catamenia*, that often occur on the Invaſion of the Diſeaſe; the intenſly red and purple Eruptions, and the dreadful *Phænomena* of the bleeding Pocks, all convince us of its fuſing Quality, as the latter evince the Fatality of its extreme Fuſion. The early Hæmorrhages indeed we find often ſalutary, (a) as the variolated Blood, and poſſibly the very Seeds of the Diſeaſe, may be expelled with it; which furniſhes no bad Hint of the Advantage of bleeding in certain Conſtitutions and Circumſtances, on the Approach of the Diſeaſe; though we cannot imagine Art ſhall withdraw the infected or infecting Particles, as electively, as Nature may ſeparate and expell them: yet profuſe Hæmorrhages in the Progreſs of this Malady are much oftner fatal than critical Symptoms.

BELLINI has not ſpecified which Part of the Blood, the *Cruor* or *Serum*, he ſuppoſes diſſolved, or inviſcidated, or partly both; nor which of the common Principles of either he thinks chiefly impreſſed or aſſimilable by this Infection. With Regard to the *Cruor*, is it not an evident Contradiction to common Senſe, and an Inſult on phyſical Reaſoning, to imagine, that an increaſed *Lentor* and Coheſion of the red Globules can fit them to paſs thoſe ſtrait cuticular Ducts, which their ſalutary Size and Coheſion does not qualify them

(a) Exanthematologia. P. 305, 306. Saepe narium haemorrhagia hos aegros curavit. *Boerh. Prax.* Vol. V. P. 312.

them to do? and will the Experiment of the human *Serum*'s inſpiſſating over Flame ſufficiently infer, that it may be ſubject to the ſame Condition, while it circulates, from this Infection, and that in the very *Apparatus* of the Diſeaſe? Does not the White of an Egg, which alſo inſpiſſates over actual Heat, and which, like the human *Serum*, is proved to be nutritive, become ſenſibly thinner from a ſtronger Agitation than the Humours undergo in their Circle? But it muſt be abſurd to ſuppoſe a further Fuſion of the ſerous or lymphatic Globules, as neceſſary to their Tranſmiſſion to the Surface; ſince in a healthy State their ſuperfluous or recrementitious Particles continually exſude or evaporate through its Paſſages. And how would an Eruption of them only, if morbidly inviſcidated, agree with the Colour of the Eruptions in the different Degrees of the Small Pocks? It follows then, that the red Globules muſt be comminuted or divided by the Effects of this Poiſon, for their Tranſmiſſion to the Surface; where they are accompanied with a greater or leſs Proportion of the *Serum*, in whatever Meaſure infected, which renders the Can a more ſupple and yielding: tho' upon the Degree of this Comminution I apprehend the Event of the Diſeaſe capitally depends. When the Eruptions appear of the Colour of a Damaſk Roſe, which SYDENHAM juſtly obſerves to be their moſt benign Complexion, may we not reaſonably conceive the Proportion of the infected red Globules to be but ſmall? their natural Size, Figure and

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Conſiſtence to be but little impaired, from their diſuted Reſemblance to arterial Blood? and their Diſtances from each other in their containing *Serum* to be conſiderable? ſince we certainly know the Quantity of tinging Particles to be leſſened in their Proportion, and to have their Diſtances augmented, from the lighter Colour that reſults to any Tincture, on the Addition of a colourleſs untinging Fluid. And may we not as reaſonably apprehend a great Infection and Attenuation of the red Globules, from the precipitate and copious Appearance of deep red, purple, or livid Eruptions? when we perceive that the brighteſt tinging Materials, ſuppoſe Cochineal or Alkanet, impart a Deepneſs that amounts to Opacity, and ſome Degree of Darkneſs, as often as their *Menſtruums* are highly ſaturated with their overcrouded Particles. And does not the Tranſparence and different Shade of Colour, that enſue from a liberal Addition of the untinged *Menſtruum*, hint ſomething of the *Rationale* of ſimple and mild Dilution in this Diſeaſe? which nevertheleſs ſhould not be exceſſive; ſince ſuch an Ingurgitation of the moſt proper Fluids may confuſe the Motion of, and conſequently the Secretion from, the Blood. Nature is ſeldom a bad Director on ſuch Occaſions; for where much is neceſſary, much will be coveted.

And here recollecting my Engagement, in the Cloſe of the firſt Section, to offer, in treating of the Operation of this Contagion, the beſt Idea of it which my Reflection and Imagination afforded

me;

me; and finding that Profeſſor SCHACHT at *Utrecht* makes a (a) Query, whether it may not be of an alcaline Nature, and affirms there are Arguments which make it likely, but without ſpecifying any of them; I have repeated on this Occaſion a few juvenile Experiments, that do not disfavour this Suppoſition: tho' I cannot conceive a Neceſſity, with moſt Chemiſts, and many former Phyſicians, of ranking all Subſtances either under the Denomination of Acid or Alkali.

Red Tinctures then, ſuppoſe of the before mentioned Materials, which are rendered of an Orange or lighter Hue, by Spirits of Sulphur, Vitriol, or Nitre, become of an intenſe red, purple, and even blewiſh, by the Addition of volatile or lixivious Salts, or the Inſtillations of alcaline Spirits, according to their different Proportions: when the predominating Affuſion of an Acid reſtores them towards their firſt Colour, or lighter, which may be altered again, *vice verſa*, by different Inſtillations for a few Times, but with leſs Tranſparency and Luſtre; as a preſent Confuſion or Cloudineſs and enſuing Precipitation are the Conſequence. Now notwithſtanding we do not infer a conſiderable Similarity between the ſpirituous and watry *Menſtruums* here and the human *Serum*; nor between the tinging Particles of Alkanet and Cochineal (tho' the latter is a concreted

(a) An non probabile aliquid de alcalina indole habere? Dantur certe argumenta quae hanc opinionem veriſimilem reddunt? *Inſtit. med.* P. 40.

creted animal *Cruor*) and the red Globules of the human Blood; yet if any one ſhall from hence ſuggeſt the variolous Poiſon to be an inviſible volatile * alcaline Salt, which proves a conſiderably cauſtic one in the moſt alcaleſcent Habits, it may not be very eaſy perhaps to diſſipate the Suggeſtion. The Experiments indeed would be ſtill more convincing and illuſtrative, if ſuch Admixtures excited the ſame Appearances in a Tincture of human Blood, extracted with a Serum-like *Menſtruum*, and kept up, during the Experiment, to the ordinary Height of human Heat. And ſhould this anſwer, tho' we are leſs ſolicitous about the Claſs than the Nature of this infectious Cauſe, we would purſue Lord BACON's Advice on another Occaſion, where he ſays, 'If any Perſon ſhall diſcover a Metal or Compoſition of the ſame Weight, Colour, Ductility, and all the other Properties of Gold, he may leave others to diſpute about the Appellation of it.' The Change of Colour from ſcarlet to deep red, or purple, on the Addi-

 tion

* Will this infer the Probability of a peculiar *Alcalinum vagum* in that Conſtitution of the Air, which has been thought epidemically communicative of the Small Pocks, without animal Contagion? And may the ſuppoſed *Acidum vagum* in the Air attemper and reſtrain the alcaleſcent Diſpoſition of our Blood, upon that judicious Extenſion of the Ὑπεναντιωσις of *Hippocrates* by *Heurnius*, L. 2. Aph. 22. which remarks, that Conſtitutions in the Exceſs of any Temperament thrive beſt on the moderate Uſe of Subſtances of the oppoſite one? And as Fire has great Influence in the Generation of Alkalis, rendering vegetable Acids, for Inſtance, Tartar, ſuch; may not this Alcaleſcence of the human Blood be generally higher in the torrid Climates, where the Proportion or Energy of the *Acidum vagum* may be leſs too? And may not theſe be the providential Reaſons of their abounding with the moſt acid and refrigerating Fruits?

tion of a ſtrong Alcali, ſeems to me to reſult from an Alteration in the Shape of the tinging Particles, which may alſo imply a Diverſity of their Size: and will not this ſtrongly correſpond both with the greater Number of ſuch intenſely coloured Eruptions, and with their extraordinary Stimulation and Pungency, when compared with thoſe of the diluter roſy Efflorescence? which may be preſumed, with the Colour, to preſerve the Form too of arterial Globules; tho' probably ſomewhat comminuted, if the Ducts have not been a little dilated for their Extruſion. There ſeems at leaſt enough in theſe Suppoſitions, to make every reflecting Phyſician diffident of the Propriety of thoſe lixivial ſaline Draughts, which have been too often exhibited in the Beginning of the Small Pocks, to appeaſe the ſymptomatical Reachings, that uſually ceaſe, when Eruption fairly appears. At the ſame Time it may be prudent to aver, that we do not intend, from the ſuppoſed alcalious Force of this *Virus*, to recommend the Cure of it by an injudicious Uſe of Acids; ſince ſome Degree of its own Operation is neceſſary to extricate it from the Blood, and to conduct the infected Humours out of the human Syſtem. And tho' the judicious prophylactic Method of RHAZES was a very cool and acid Regimen; and HOMBERG aſſures us, the Fluids of young Animals afford more Acid than thoſe of Adults of the ſame Species; whence one Reaſon of this Diſtemper proving generally milder in Children, may be ſome Approach of its external

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Cauſe to a more neutral State in their Fluids: yet it may be the Height of Imprudence, 'till its ſpecific Antidote be diſcovered, to attempt an Extinction of that ordinary Proceſs, by which it ſo pervades our Conſtitution, as never to reviſit it: notwithſtanding we have little to oppoſe to its moſt virulent Operation but powerful Acids, Styptics; and not only free ventilating Air, but perhaps the ſtrongeſt potential Cold we can generate and apply.

Thus far of its Action chiefly on the red Globules: but in the very confluent Small Pocks, which however dangerous, are conſiderably leſs ſo than the bloody Sort, we find an extraordinary Derivation of Lymph to the ſalivary Glands. This muſt either happen from a variolous Diſſolution of the red Globules into ſerous or lymphatic, as it occurs in mercurial Salivations (from whence nearly an entire Renovation of the Maſs) or from a vitious or variolous Lymph: tho' the meer Irritation of the *Fauces* might certainly occaſion a great Derivation of it thro' the ſalival Glands, whatever its Quality be. I am ſenſible that a very few experienced Phyſicians have imagined a great Quantity of this Diſcharge, rather pernicious than ſerviceable to the Patient; tho' SYDENHAM and others conſider it as eſſentially ſalutary to Adults in the confluent Kind. Poſſibly the former ſuppoſe it exhauſts the Patient extremely, and leaves the Maſs too viſcous and undiluted. For my own Part, 'till ſtill further Experience may inſtruct me otherwiſe, tho' I

generally ſuſpect thoſe Degrees of the Diſeaſe, that bring on this Diſcharge profuſely; and always deſire to ſee ſuch as are commonly attended with little of it, I confeſs I apprehend, that Adults ſeldom emerge thro' a great Confluence, without a conſiderable Evacuation this Way; eſpecially where the Puſtules have not ſuppurated more benignly and brightly than ſuch generally do. Perhaps it might be as reaſonable to ſuſpect the moiſt Swellings of the Hands and Feet, which, in the happy Termination of ſuch Caſes, almoſt ever ſucceed to the Abatement of the Salivation, and the Tumour of the Face. If the *Saliva* is morbid or variolated, the Expulſion is neceſſary; and it may be worth an Experiment, whether a leſs or greater Quantity of it would communicate the Diſeaſe by Inciſions; which perhaps it may as effectually do, as the *Saliva* of a mad Dog injects his *Rabies*. May we infer then, that Bodies very pregnant with the variolous *Fomes* have their *Serum* proportionably furniſhed with it; while in others it may poſſibly ſerve to dilute the former, and attemper the Effects of Contagion? But however this may be, the great Fuſion of the Humours, in the ſeverer Degrees of this Malady, is fully manifeſt from this Evacuation.

TIMONI indeed affirms, that among the other good Effects of Inoculation, it is attended with *no* Fuſion of the Blood; which I conceive is not to be admitted without frequent Limitation: but had he affirmed, it was very generally attended with *much leſs* Fuſion, it would have been ſtrictly right.

right. And indeed I have often ſeen ſuch a ſmall Number of Puſtules by Inoculation, from half a Dozen perhaps to half an hundred, and thoſe fill, or ſometimes half fill, with a thin dilute Humour, the Patient continuing all the Time entirely light and eaſy, that it was obvious there had been very little Fuſion of the red Globules. But ſurely the remarkable frequent Fluſhings, before actual ſickening by Inoculation, will diſpoſe us to infer ſome * Attenuation of the red Blood. And as a very plentiful Eruption now and then happens to a few of the inoculated, with a proportionable Inflammation and Maturation; it is offending againſt Experience to affirm *no Fuſion* of the Blood from Inoculation; and is really doing no Service to the Practice, which is diſſerving the Subjects of it: as the moſt effectual Way of promoting it is to relate all, and no more than all, the Truth concerning it. It muſt be admitted however, that the Practice was in its meer Infancy, with Regard to *Europe*, in TIMONI's Days; and perhaps it needed the utmoſt Eulogies he could give it, to avail us of its many happy Conſequences, which we have ſince experienced.

We

* I remember that about ſixteen Years ſince, a young Nobleman at Weſtminſter School, who was inoculated, died of a Loſs of Blood in the Apparatus of the Diſeaſe; but whether it was from a ſpontaneous Hæmorrhage, or happened in Conſequence of bleeding him in it, and not being able to ſtop the violent Effuſion in Time, I cannot perfectly recollect; tho' I think it was owing to the latter. I viſited a ſanguine Youth of 14 or 15, inoculated 5 or 6 Years ſince, who, notwithſtanding a preparatory Bleeding, fell into copious and repeated Hæmorrhages, previous to and during Eruption; but in other Reſpects paſt very eaſily thro' a pretty moderate Eruption.

We have inſiſted the longer on this attenuating, which in a higher Degree may be called the *fuſing* Power of the variolous Principles; as we conceive it has an immediate Tendency to eſtabliſh a more reaſonable Practice, than what has too often prevailed on the Invaſion of the Diſeaſe: ſince a conſiderable Error either of Commiſſion or Omiſſion then, is too frequently incompenſable by any Thing we can do, or omit, in the Progreſs of it. And too many ſeem to have miſtaken the comparative Magnitude of the variolated Globules, in Reſpect of the ſmall Chanels thro' which they are to paſs, for a general Viſcidity of the Maſs: and hence plying the Patient with very ſtimulating Attenuants within and without, they have precipitately exalted the Poiſon, whoſe Operation was to be mitigated with Judgment.

But tho' I have abundantly convinced myſelf, at leaſt, of the fuſing Power of this Contagion on the Blood, I conceive, that a very oppoſite State of the Blood may enſue, from its total Abſorption by the olfactory Nerves, its Admiſſion to, and Confinement in, the Brain. DIEMERBROECK and others have conſidered peſtilential Contagion by Smell, as the moſt pernicious Mode of it: and perhaps the Force of that exquiſite Poiſon is ſufficiently deleterious, to extinguiſh the vital Spirits, or to arreſt their Secretion and Action inſtantaneouſly; as ſome are affirmed to have dropt down dead, without the leaſt previous Complaint or Token of Infection. But as the variolous Contagion is certainly leſs virulent, we may contem-

contemplate at leaſt, what will probably prove the Conſequence of its total Abſorption by the Smell, and its Confinement to the nervous Syſtem. Now though we can form no preciſe Idea of the Manner of its Diffuſion thro' the Nerves, or the unravellable Subſtance of the Brain; yet, as their Texture and Senſation are very exquiſite, its Reſidence muſt be incommodious, and will certainly leſſen, or ſome way pervert, the nervous Functions. But the Quantity received was not yet augmented by the humoral *Fomes*: its Activity is not likely to be exalted by the comparative Coolneſs of the Part, and the Slowneſs of what imperceptible Circulation there may be in the cortical and medullary Subſtance. It is equally probable, that whatever the nervous Secretion may conſiſt of, it is too highly attenuated to be a commodious Soil for the Invelopement and Increaſe of theſe contagious Seeds. If their Preſence impairs the Functions of thoſe Nerves, that are particularly ſubſervient to the vital Motions, the Contraction of the Heart will be feebler, the Circulation more languid; the nervous Secretion at its Origin proportionably leſſened; and the Blood be thence diſpoſed to a more ſtagnant and viſcid State. If the inhaled Contagion prejudices thoſe Nerves, in their Subſtance or Contents, which mediate between the Mind and external Organs of Senſe; and thoſe whoſe Functions are neceſſary even to intellectual Perception, Senſation will become ſo obtuſe, the vital Oeconomy ſo confuſed, and the Faculties ſo oppreſſed, that both

both animal and rational Life will be ſurpriſingly obſcured, and the Circulation but juſt ſufficient to prevent their Extinction; untill theſe Invaders are expelled by ſome extraordinary Effort of Nature, Art, or both, from ſuch improper Quarters. And beſides that this Eclipſe of the Mind calls for a more ſtimulating *Craſis* of the Blood, to excite the Functions of the human Organs, the Contagion that would conduce to it, if in the Blood Veſſels, is differently employed. This muſt be more than meer Imagination, as I have repeatedly ſeen Perſons in this very State before Eruption, comatoſe, torpid, cold and relaxed: and I particularly remember a young Subject thus affected, who, being rouſed by a Vomit, a Bliſter, and ſome fetid Cordials, received a moderate Fever, that was ſoon attended with a mild Eruption; on which all the nervous Symptoms vaniſhed, and the Diſeaſe terminated happily.

A worthy Phyſician of St *Bartholomew*'s Hoſpital, has candidly obliged me with three Hiſtories of this Mode of variolous Infection, two by the natural Diſeaſe, and one by the Infuſion. For tho' we have ſuppoſed the latter the moſt immediate and ſimple Application of this *Virus* to the Blood; yet, wherever the earlieſt Symptoms are conſiderably more nervous than inflammatory, we chuſe to denominate the Infection ſuch. Beſides as ſome nervous Fibres are divided, as well as ſome capillary Blood-Veſſels, by the Inciſions, we cannot be certain whether the former may imbibe any of the purulent Particles, or their volatile

latile Poiſon, or not; tho' we can be pretty clear from the Symptoms themſelves, where the Determination of the contagious Particles has been, whatever their immediate Receptacle was.

The firſt Caſe, in the natural Way, was that of a Girl between ſix and ſeven Years old, who, after a Complaint of her Head and Back, was ſeized with a very violent and long Convulſion: When it was over her Speech greatly faultered, but returned, 'till being ſeized with three ſucceſſive Fits next Day, ſhe loſt the Uſe of her Speech, and Limbs entirely. The Eruption notwithſtanding appeared, was very diſtinct, and terminated eaſily, tho' ſhe lay ſpeechleſs and motionleſs all the Time. Full three Months after ſhe began to recover her Speech, but her Limbs more ſlowly, for in July ſubſequent to the January when ſhe was ſeized, ſhe had a great Weakneſs in her Legs with frequent Trembling. Here the Symptoms were apparently nervous, tho' the Chanel of Infection is uncertain. She is ſince entirely recovered.

The ſecond Patient, who was alſo accidentally infected at five Years of Age, was judged to have a favourable Eruption, which ſoon turned: but the following Day, after a violent Sickneſs at Stomach, ſhe loſt her Speech in a very few Hours; and, within a few Days, both her Senſes and her Strength were reduced to that of an Infant in the Month. This Privation continued, tho' with ſome Increaſe of Appetite, and Health in other Reſpects, for ſix Weeks; at the

End of which ſhe began to give ſome obſcure Signs of Underſtanding, and to take that little Notice of Things which Infants do, but made no Attempt to ſpeak 'till after 14 Months; and could not ſpeak every Thing till the end of 4 more, as ſhe ſeemed to learn more ſlowly in this than in her firſt Infancy. She could not however even then ſtand alone; but after uſing the cold Bath ſix Months, entirely recovered her Limbs, and continues now very healthy, about the Age of 36. In this Caſe the Blood ſeems to have been primarily and moderately infected, and the Nerves to have ſuffered but in Conſequence of a Tranſlation of thoſe morbid *Effluvia*, which ſhould have ſalutarily tranſpired from the Surface. But had the Infection, and conſequently the Tranſlation, been more copious, might not a total Extinction of the nervous Influence, which is Death, have enſued inſtead of this partial one? this being probably the Caſe of many who expire convulſed about the ſame Period under a ſeverer Eruption. There alſo was, before the former Edition of this Treatiſe, an Adult at St. *Bartholomew*'s whom I had ſeen; he had a moderate Eruption in *April* 1752, which filled and turned benignly enough; tho' he loſt the Uſe of his Speech and Limbs for many Months: which he had not wholly recovered in *Auguſt* 1753:* and on this Article of nervous Infection I may refer to the Caſe of the Boy, tho' not variolous, § 1. P. 12. who recovered from the Stench of the putrid

* He has not yet recovered articulate Speech, and has a weekly Allowance from a Pariſh at *Bath*, at this Time 1761.

trid Body, but loſt the Uſe of his Limbs, and was forced to take to a ſedentary Trade.

The Caſe by Inoculation was that of a Child between two and three Years old, who had been brought low by a Fever a little before. His Convulſions were violent, his Puſtules very few, and when they finiſhed their ordinary Courſe, he had entirely loſt the uſe of his Speech and Limbs, and could not keep his Head erect; which, on his being ſet up, tumbled ſideways or forwards. It was three Months before he fully recovered his Speech, and at the End of five his Limbs had not attained their former Strength. At this Time however, having very lately ſeen him, he is very lively and walks pretty well; tho' not quite ſo firmly as ſome robuſt Lads of his Age, being now towards eleven. Indeed there is ſome Ground to ſuppoſe his Nerves have been originally rather weak: he had ſome Convulſions in a former Fever before the Invaſion of the Small Pocks, and one or two previous to the Meaſles, which happened afterwards.

May we reaſonably infer here, that the preceding Fever, which had brought the Child low, made him ſtill more obnoxious to theſe nervous Symptoms, both by further weakening his Nerves, and leſſening the humoral *Fomes* of the Diſeaſe for a Time? as we have already remarked, that the *ſalino-ſulphureous* Parts of the Blood were diſcharged in an extraordinary Proportion by Urine, in the ſalutary *Criſes* of acute Fevers. Neither is it difficult to conceive, that where the

Contagion finds but little Employment, and creates little Tumult, in the Blood, it may not the leſs eaſily pervade the moſt ſubtil and untraceable Receſſes of the Circulation, the Brain and Nerves: tho' poſſibly its Reſidence in the Blood, for ſome Time before its Arrival there, may render it more ſtimulant and dangerous, than its Conveyance there at firſt thro' the olfactory Nerves; ſince we do not experience the like Irritations to enſue for ſome Days after a manifeſt Infection by Scent. And as ſome weak and tender Subjects fail in this Manner of Invaſion before Eruption, tho' very rarely; may we not aſcribe it to the invincible Lodgment of the volatile Poiſon in the Nerves immediately ſubſervient to vital Motion, which, preventing their Functions, muſt occaſion ſudden Death? Thus alſo their Determination to the Nerves of Speech and Senſation will aboliſh thoſe Functions; and that to the Nerves, which are inſtrumental to the Exertion of the different Faculties, muſt produce a Loſs or Obſcurity of them: all or ſome of which Effects were probably prevented by the Expulſion of the poiſonous Stench of the putrid Carcaſe, far from ſuch Nerves, to the great Iſchiadic one, which terminated in the Boy's incurable Lameneſs. May it not clearly follow from ſuch Fact, that the epileptic Inſults of Children previous to Eruption, (which SYDENHAM and Experience inform us are generally ſucceeded by a diſtinct one) are an extraordinary Effort of Nature, by which ſhe explodes, as it were, the heterogeneous

ous Cauſe into the groſſer Circulation, for its Expulſion by the Surface? Have theſe convulſive Agitations any co-operating Tendency to excite the ſubſequent Fever neceſſary to this Expulſion? And does this Fever make the Blood more ſtrongly attractive of this Poiſon which convulſed the Nerves; and thus ſerve as ſome *Succedaneum* to the Paucity of a humoral *Fomes*, by exalting what there is of it? And as all ſuch horrible Diſtortions of our Frame are accompanied with great ſeeming Agony, has the divine Compaſſion obſcured our Feeling and Perception at the ſame Time; to the End, that while a very painful Cauſe and unnatural Kind of animal Motion violently acts and ſubſiſts, it ſhould prove tantamount to none, from our concomitant Inſenſibility? By the Way, are not the *Tremors* that frequently infeſt Children before, and in the Infancy of, Eruption, and which ſeem a Kind of vibratory Motion of the Nerves, a conſiderable Argument that ſuch a State of them is morbid; and that their natural Action is not by Vibration, as ſome have imagined?

Now as all the aforeſaid Subjects of this Mode of Infection had a very mild Eruption, which Children convulſed in the Attack of this Diſeaſe frequently have, is it not highly probable, that many who have a natural Scarcity of the variolous *Fomes* may (but more particularly where their Nerves are originally weak, or rendered ſo by any previous Depreſſion) be more liable to the like Symptoms; while ſuch hot active Blood as abounds with it will be proportionably attractive

of

of its inflaming Spark? This may be illuſtrated a little by our ſeeing a Candle whoſe Flame is out, but the Wick not extinguiſhed, quickly catch Flame, and even at ſome Diſtance, from a lighted one. In Fact what Courſe do we ſo ſucceſſfully take in theſe variolouſly nervous Caſes, as that of conveying ſuch active Particles into the Habit as we ſuppoſe ſimiliar to the *Pabulum*; while we excite ſuch internal and external Stimulation, as the Contagion, when diffuſed thro' the Blood, generally does? Thus we ſee that a few Patients may be ſo peculiarly circumſtanced in this Diſeaſe, that even the Scarcity or Feebleneſs of its inherent Cauſe, tho' very often to be wiſhed for, may tend to the Production of ſome anomalous Symptoms: as half an Opiate has been known to keep a Patient awake, and to introduce an uneaſy Confuſion, by not procuring the Sleep expected from it. Such a State then muſt rationally ſuggeſt a very different Indication from that of the ordinary and regular Appearances of this Diſeaſe; and Bleeding eſpecially muſt be as prepoſterous here, as its Omiſſion would, in a high ſanguineous Infection and ſtrong Habit. Opiates too muſt act like Poiſons; and this different Indication will coincide with the general Obſervation of HIPPOCRATES, (a) That a Fever ſucceeding Convulſions is oftner ſalutary, than Convulſions ſupervening on a Fever: while it evinces the Prudence of his thinking Imitator SYDENHAM, who

(a) Πυρετον ἐπι σπασμῷ βελτιον γενεσθαι, ἢ σπασμον ἐπι πυρετῷ. L. 2. Aph. 26.

who directed a Bliſter and Cordials in ſuch Circumſtances, for which he has been taxed by ſome, as inconſiſtent with his own *Regimen*.

Having ſo lately mentioned the great Impropriety of Opiates in ſuch nervous Infections, I cannot omit an Inſtance of a deplorable Weakneſs of the Nerves, ſupervening after the repeated Exhibition of Diacodium only, in a Caſe from Inoculation: for the Communication of which, and more on this Subject, I am obliged to Serjeant RANBY.

The Daughter of a Nobleman being inoculated, at ſeven Years of Age, ſickened very favourably the ſeventh Day, and had not more than 40 Puſtules in her Face. But after complete Eruption, the Puſtules, which were very large, growing ſore, rendered her very uneaſy: on which Account the Phyſician who attended ordered a Draught to be taken at Night with a proper Quantity of Diacodium; which was nightly repeated 'till the Turn of the Diſtemper; at which Time, tho' the Child ſeemed to retain her Senſes perfectly, ſhe totally loſt her Speech and the Uſe of her Arms and Legs, which perſiſted, with very little Amendment, for three Years; her weak and feeble State continuing ſtill longer, tho' ſhe at laſt recovered and is now very healthy. This tedious Misfortune nevertheleſs did not prevent her noble Father, who was a very intelligent Man, from inoculating his only Son afterwards, but enjoining a Reſtriction from all Opiates. His Commands were obeyed, and his

Son

Son went thro' the Diſeaſe very eaſily and happily. —— It is certain indeed that a few peculiar Habits are diſpoſed to receive only the literally enervating Operation of this wonderful Drug. And every prudent Phyſician, the firſt Time he directs an Opiate for a Patient, muſt think it right to enquire, if he has ever taken any, and how they affect him. It happens fortunately enough however, for the Subjects of a Diſeaſe, in which Opiates are certainly often ſerviceable, that ſuch peculiar Habits are very rare. Camphire has been ſaid to ſucceed as an Anodyne where Opium diſagrees, which I had never any Occaſion to experience: and *Aſa fœtida* has been ſuppoſed by ſome to obviate its depreſſing Conſequences. We are certain there can be no Imprudence in avoiding to direct it as of Courſe, and for Form; but to let it be fairly indicated firſt, particularly in weak, ſuſpected Habits.

And yet to ſpeak the whole Truth on this Occaſion, I am not convinced that the Diacodium, given here in its proper Doſe, really occaſioned the calamitous Debility, which enſued after uſing it: eſpecially when I reflect that I have never heard, whether the * three Patients, who ſuffered ſo greatly in their Nerves under the natural and the artificial Diſeaſe, ever took any Diacodium or not. At the ſame Time this Caſe may ſerve, as ſome Caution, to moderate that rather officious than thinking Conduct of thoſe who ſeem to judge, that all Senſation of Soreneſs is to be

* See their Caſes p. 89, 90, 91.

be extinguiſhed, by keeping the Patients, throughout the tender inflammatory State, under the ſcarcely intermitted Influence of Opiates: of which we may alſo obſerve by the way, that they have been thought by ſome experienced Phyſicians, to agree leſs in the Small Pocks of ſome Years, than in that of others.

Upon the whole of nervous Infection, it ſeems clearly inferable, that a Tranſlation of the variolous Contagion from the Nerves into the Blood is more rarely fatal, than the Tranſlation of the increaſed and heated Contagion upon the Nerves: for tho' we have admitted a few tender Subjects to miſcarry under nervous Infection, for want of its Tranſlation into its proper Receptacle, the Blood; without which, as its Vehicle too, Eruption, the firſt *Criſis* of this Diſeaſe, cannot enſue: yet a much greater Proportion die from an immediate Infection of the Blood itſelf. Of ſuch it muſt be confeſſed many periſh from the conſequent Putridity, Colliquation, or meer Exhauſtion of the Fluids; or an Inflammation and Gangrene of the Solids, while the nervous Functions ſeem not proportionally impaired. But we know from Experience, that ſtill more are affected, towards the fatal *Cataſtrophe* of the confluent Diſeaſe, with ſuch furious *Deliria*, high Orgaſms, and ſtrong Convulſions, as demonſtrate the Nerves to be violently injured thro' the *Medium* of the infected Blood: And theſe may well be conſidered as their acute Symptoms, in Compariſon of thoſe before mentioned; which not going off with

Eruption, nor yet extinguiſhing the Life of their Subject, terminate in a greater or leſs Imperfection of ſome of the animal Functions, for a longer or ſhorter Term.

It only remains to enquire here into the moſt uſual Period after Infection, when its ſenſible Operation commences, which it ſeems difficult to aſcertain preciſely, with Reſpect to natural Infection. For where the Diſtemper is very rife and even epidemical, it is ſeldom the Subject, who is generally ſuppoſed to avoid Contagion, can ſtrictly fix the Time of receiving it, or the accidental Contact of any infected Material: beſides which, the Seaſon of the Year; the general Character of the Diſeaſe during that Conſtitution of the Air; the particular Habit of the Subject, and his Way of living after an unconſcious Infection, will probably occaſion a little Diverſity in this Period. Some have been ſaid to ſicken a Month or even two, after they have exchanged the Scene of Infection for another apparently free from it: and this has been ſtrongly affirmed of a more virulent Contagion; tho' ſuch Caſes are undoubtedly rare. Others have ſickened, as it were immediately, from the Sight of a Perſon newly out of the Diſeaſe: but this is generally accompanied with great Dread, and the Infection is often fatal. I remember one Inſtance of a Gentleman's complaining the ſeventh Day after a Scent, which was certainly variolous; and who, after a very copious Hæmorrhage from the Noſe on the eighth, paſt thro' a kindly Diſtem-

per.

per. This by the Way muſt aſſure us, that the Blood may be primarily infected even thro' the Smell, as we had no Convulſion, remarkable Head-ach, Delirium, *Torpor*, or nervous Symptoms; except the *Lumbago* be one, which was diſſipated by the Loſs of Blood, the Stream of it being very free, and the Complexion bright and florid. As this acute Diſeaſe however has its different *Criſes* and *Stadia*, perhaps the moſt regularly of any, let us ſuppoſe that the Seeds of it, even unconſciouſly received, have, in general, a certain Period of remaining in the Blood, before they effect its ſenſibly morbid Alteration. Now as the Inoculated rarely complain, or but ſlightly, before the ſeventh Day after, and often not untill the eighth; and the moſt benign Pock is generally arrived at Maturation the ſeventh from its Appearance, we may grant them to lie about a Week in the Habit, before they are ſufficiently increaſed to manifeſt the Symptoms. But here it is plain the Inoculated, who can aſcertain the very Minute of Infection, have a material Advantage of thoſe unconſcious of it: ſince, beſides their Preparation for the Diſeaſe, they have, as it were, ſuper-added a new *Stadium* of a full Week previous to the ſenſible Invaſion of it; in which, while they endeavour to leſſen and mollify its natural Fuel, they are certain to commit no Irregularity that may exaſperate the Infection; which the others, eſpecially if Male-Adults, are ſo liable to do. But having admitted this ſeeming Inactivity of Infection for a Week, it ſhould

be ſubjoined, for * Reaſons already ſpecified, that there are many Exceptions to it in the natural Way, which, tho' more rarely, may take Place in that of Inoculation too. Thus PYLARINI informs us, the Symptoms do not appear in all the Inoculated at the ſame Period; the Ferment acting ſooner or later, according to the various Temperament, Age and Strength of the ſeveral Patients; and he ſays, there have been Inſtances, tho' rarely, where Eruption has appeared the firſt Day. TIMONI alſo ſays, the Small Pocks begin to appear ſooner in ſome than in others. Dr. LE DUC, who was inoculated at *Conſtantinople*, ſickened the fourth Day; he had a ſmall Eruption of the diſtinct Kind, and aſcribes the Diſeaſe to Art. So that upon the whole, our early Inoculators ſeem to have hurried on too precipitately to this Concluſion, that as many of their Patients as ſickened before the ſeventh Day, which ſome of the few who miſcarried did, had previouſly received the natural Infection, to which they were very zealous of aſcribing the Miſcarriage. And tho' it is certain that moſt of them had been too much expoſed to the Hazard of it; and ſome, with the greateſt Probability, had taken it; nevertheleſs ſince this variolous Aſſimilation is a morbid Alteration of the Blood, wherever the Matter capable of ſuch Alteration is very copious, it is reaſonable to infer, that the Progreſs of it may be proportionably ſpeedy; and ſometimes even precipitate Nature to attempt that Separation of the aſſimilated Humours, which is neceſſary

* See P. 98.

neceſſary to purify the Maſs for vital Purpoſes. We are not to wonder however, that all the Obſervations from TIMONI and PYLARINI were not at firſt ſo ſtrictly attended to, where the general Event of the Practice was very proſperous. Mr. MAITLAND, our earlieſt Inoculator, was a very moderate phyſical Reaſoner himſelf; ſome Pamphlets that appeared afterwards under his Name, in a medical Juſtification of the Practice againſt Dr. WAGSTAFFE, *&c.* being aſcribed to the ingenious Dr. ARBUTHNOT. Undoubtedly, among its many early Promoters, ſome acted from Candour and Philanthropy, and others too probably from a ſordid Attachment to themſelves alone; which muſt diſpoſe them to qualify and elude, to their utmoſt, any Event, that might contract a valuable Article of Trade. But no longer to indulge any unavailing Reflections, a great Majority of Inſtances obliges us to admit the ſeventh or eighth Day, as the moſt general Term of the artificial Invaſion, and the ninth or tenth of Eruption, in this Climate: where it occurs earlier, we may reaſonably apprehend a greater Diſeaſe: tho' it is certain, that this pretty general Axiom is not without its Exceptions. We have juſt mentioned one in the Caſe, of * Dr. LE DUC. Another happened to a Gentlewoman about 30, whom I inoculated in December 1757. She ſickened at the End of the fourth, or very Beginning of the fifth, from Inoculation; had Eruption on the ſeventh, with benign moderate Symptoms,

* See above P. 100.

Symptoms, and not above ſeventy Puſtules at the moſt. And thus although, where Eruption is retarded a Day or two, a very gentle one is the moſt general Conſequence, as I remember it proved to a young Lady, whoſe very moderate Eruption was delayed to the fourteenth, and whoſe Diſtemper was next to none: and likewiſe to Mr. WILLIAMSON from *South-Carolina* whoſe Eruption appeared on the thirteenth, and was very moderate indeed; yet I have alſo met with a few Exceptions to this Rule, by a conſiderable Eruption enſuing notwithſtanding it had been tardy; and in which the Symptoms have been high, tho' not fatal. I have been alſo authentically informed of three Inſtances, occurring a few Years ſince, in two of which Eruption did not happen before the ſeventeenth Day, and was very conſiderable, with other dangerous Symptoms, tho' both did well. A Boy of ſeven Years old at *Egham* ſickened the twenty-third from Inoculation, had a ſevere Eruption and Diſeaſe, but eſcaped. His Brother, inoculated with him and from the ſame Matter, ſickened at the ordinary Term, and paſt the Diſeaſe very eaſily. The two former were not Brothers, nor nearly related I think. In Miſs DEGRAVE's extraordinary Caſe, Eruption, which proved moderate, did not happen till eleven Weeks after Inoculation, upon heating herſelf at the Play-houſe, which produced an undetermined Controverſy, whether ſhe ſickened from Accident or Art: but as ſhe complained during that whole Interval of indifferent

Reſt

Reſt and Appetite, and was ſubject to erratic Fluſhings ; and as DIEMERBROECK gives us (1) an Inſtance, from his own Knowlege, of the Contagion of the Plague lurking in the Body (tho' with a few ſuch Symptoms, but without a Fever) for three Months before it plainly manifeſted itſelf, we may very well conceive the *Languor* or Dormancy of the variolous *Aura*, in a Habit but little diſpoſed to the Diſeaſe, for eleven Weeks. There are undoubtedly ſome particular * bodily Diſpoſitions with Regard to different

(1) De Peſte. L. 4. Hiſt. 103.

* How very particularly a Perſon may be conſtituted for this Diſeaſe [for this Diſeaſe I verily think it was] will appear from the following Caſe.

About four Years paſt, when it was frequent here in Summer, one *William Cartwright*, a labouring Man towards forty, employed in a Foundery, on the lower Ground in *Southwark*, was taken with the uſual Symptoms, which were followed with a very conſiderable Eruption, that turned yellowiſh in the Face, where they cohered at leaſt, and were rather flat and ſeſſile than prominent. Soon after, and to the beſt of my Recollection, even during Eruption, he voided for ſome Days a conſiderable Quantity of bloody Urine, which ſeparated and depoſited a large Cake of red Blood, as manifeſtly as that drawn from a Vein. The Swelling of his Face was ſo ſmall, in Proportion to his Eruption, that he was never blind ; notwithſtanding he had ſeveral Puſtules about his Eyes, and on his Eye-lids. Many of thoſe on his Body, and I remember particularly on his Thighs, where they were more diſtinct, were filled, not with Matter, but what appeared to be real Blood, and that rather darker coloured than uſual. Others of them were yellowiſh, but leſs turgid, and ſcabbed and ſcaled as in the Small Pocks, pitting rather ſuperficially. He ſpit but very little for his Quantity of the Diſeaſe, and complained ſcarcely of any Pain, but was very weak. He took the Drinks and Medicines preſcribed him, which were of a temperate, nutritive, and ſomewhat incraſſating Nature : he was ſcarcely ever delirious, did not once vomit, to the beſt of my Recollection, and recovered much as uſual, and in about the ſame Term as after the common Small Pocks :

rent Infections; and ſuch a Variety of external Accidents may concur to retard, to accelerate, or otherwiſe to diverſify their Operation; that tho' we can generally predict the Term of their Energy from the Time of their Reception, it is not ſtrange, that ſuch extraordinary Inſtances ſhould ſometimes occur, as Exceptions to the general Rule, and elude the ſtricteſt Inveſtigation of our very limited and imperfect Knowlege.

Pocks: when he took two or three Times, at the uſual Intervals, a purging Infuſion in which Rhubarb and the Bark were not omitted, arriving ſoon after to his cuſtomary Strength, and returning to his ordinary Labour. This Diſeaſe, with all its ſurprizing and threatening Irregularity, was however much liker the Small Pocks, than any other Diſeaſe I have ſeen. He had never had it before; it was epidemical then in his Neighbourhood, where it has been frequently ſince, without ever infecting or terrifying him. I have ſeen him often ſince very well; and tho' I know no other Name, but the Small Pocks, for his Diſtemper, I confeſs I would gladly give my Attendance and a Trifle beſides, to engage him to ſubmit to Inoculation, for a Proof of the Identity of his former irregular Diſeaſe, if he did not take by Inoculation; and, if he did, to obſerve, how the undoubted Small Pocks would operate on ſo peculiar a Subject. The Certainty of the ſame Subſtances convulſing or killing Men, and nouriſhing other Animals (having myſelf ſeen a Maccaw often chew *Colocynth*, or bitter Apple, and nibble Arſenic a conſiderable Time, without any bad Effect) may be partly accounted for from the different Structure of their Stomachs, *&c.* and the different Conſiſtence of their Blood. But the different Effects of the Poiſon Vine in *America* are much leſs intelligible; as the ſlighteſt Touch, or the very Shade of it (which muſt act from its *Effluvia*) is aſſured to inflame, ſwell, and bliſter moſt human Bodies, while a few even handle it with total Impunity.

SECTION IV.

Of the Riſe and Date of Inoculation, and its Introduction into Europe.

THE preceding Enquiries into this Contagion and its Nouriſhment, and into ſome of the early and general Effects of their Combination, may conduce perhaps towards forming a radical Notion of this Diſeaſe; without which there can be little Proſpect of its proper Treatment. And our daily Experience and weekly Accounts ſufficiently atteſt the very conſiderable Fatality attending this Combination in the natural Way: ſo conſiderable indeed, that the Small Pocks have been generally eſteemed more pernicious to the *Engliſh*, than to moſt other Nations of *Europe*. This was no bad Reaſon then for our being the firſt *Europeans*, who have largely availed themſelves of the indiſputable Advantages of joining the external and inherent Cauſe by Art: to which alſo the juſt and entire Poſſeſſion of our religious and civil Rights, of our human and Chriſtain Liberty, and the Genius of a People, who are ſtrongly addicted to think for themſelves, have greatly contributed.

But the firſt Diſcoverer of this Method, as well as the preciſe Time and Place of its Diſcovery, are not only unknown to the *Europeans*, but, as far as we can learn, to the *Aſiatics* themſelves, from whom we received it. Hence it is not improbable it might be made by * Accident, without the leaſt medical Deſign or Deduction, and by ſome poor unlearned, but Heaven-taught, Mortal, who, from the rude and illiterate State of his Country, has never been recorded. Were this Conjecture as true as probable, the Fact might very properly repreſs the Pride of human Erudition, and the Futility of many laboured Reſearches: while it muſt naturally remind us of that Paſſage in the *New Teſtament*, where our Saviour glorifies his Father, for concealing ſome things from the Wiſe and Learned of the Earth, and revealing them to Sucklings. For had it occurred

* M. Geoffroy obſerves, 'that moſt Specifics too have been thus diſcovered, and gives us the following Account of the Diſcovery of the Bark, in his Hiſtory of medicinal Subſtances, tranſlated by Dr. *Douglas*, 'Some Trees which bear it being blown into a Canal, or Pool of Water, lay there 'till the Water acquired ſo bitter a Taſte, that no Perſon could drink it: one of the neighbouring Inhabitants, however, being ſeized with a violent hot Fit of an Ague, and finding nothing elſe to quench his Thirſt, ventured upon a large Draught of this bitter Water, which cured him of his Fever and Thirſt at the ſame Time. This being made known by him for the Benefit of his Neighbours, the ſame Water was uſed by many, with equal Succeſs: but the Trees coming at length to rot, the Water loſt its bitter Taſte and Virtue likewiſe; but upon a diligent Search after the Cauſe of this Bitterneſs, they at length traced it up to the Bark of theſe Trees, which has ever ſince been made uſe of, as the moſt certain Remedy for intermitting Fevers of all Kinds.' — We do not find however, that the preſent Practice warrants the Exhibition of it in any Part of the Paroxyſm, hot or cold.

curred to any Perſon of Rank or Education, or to one of medical Abilities, the Love of Fame or Profit muſt certainly have informed us of the Name of a Diſcoverer, who merits more from his Species than many, who have had Statues, and even Altars, erected to them.

I am aware that Dr. MEAD may be underſtood to ſuppoſe this Diſcovery the Reſult of (1) Study and Conſideration in one Paſſage, where he ſays, 'As Experience had demonſtrated, that no Perſon was ever twice afflicted with the Small Pocks; and that ſcarce one of a thouſand eſcaped it entirely, it was thought expedient to conſider how the Diſeaſe might be communicated:' tho' he qualifies this Notion ſoon after, by adding 'it was Matter of Wonder to him, how a People ſo ignorant of Phyſic, as the *Circaſſians*, could make the Diſcovery.' Mr. MAITLAND, on the other Hand, expreſſes his Admiration of the great Sagacity and diligent Obſervation of the *Men*, as he phraſes it, who firſt invented it. Dr. HARRIS, not with leſs Probability, ſuppoſes it diſcovered in ſome of the more ignorant Nations of *Aſia*, and propagated to us by the Will of Providence. And ſurely there can be no Abſurdity, nothing impious or preſumptuous, in ſuppoſing the divine Compaſſion peculiarly exerted, in ſuggeſting to afflicted Mortals, by whatever Means or Inſtrument, a Method for blunting the Arrows, and extinguiſhing, or very greatly reſtraining, the Fatality of this loathſome Deſtroyer: when we re-

 flect,

(1) De variol. P. 74.

flect, that the utmoſt Efforts of human Study and Skill very often fail in the Cure of its ſeverer Degrees; and too probably ſometimes perplex the ſlowly ſalutary Oeconomy of Nature under it. In brief this appeared the *dignus vindice nodus, cui Deus interſit :* and theſe Reflections may deſerve the Attention of thoſe miſtaken Theologiſts, who terming the Small Pocks the *Flagellum Dei*, make the very Succeſs of Inoculation (inſtead of obſerving the divine Admonition of *judging of the Tree by its Fruit)* an Objection to the Uſe of it; as it is endeavouring, they ſay, to elude the divine Scourge. But this abſurd Objection might as juſtly infer, that we ought not to uſe any human Means in any Diſeaſe, which may be equally by the divine Will, and certainly is by the divine Permiſſion.

Caſſem Aga, Embaſſador here from *Tripoli*, in the Reign of GEORGE the Iſt, declared this Practice was ſo antient in *Tripoli*, *Tunis*, and *Algiers*, that no Body remembered its firſt Riſe; and that it was generally practiſed, not only by the Inhabitants of the Towns, but alſo by the wild *Arabs*. Of courſe this Embaſſador could ſay nothing of the firſt Diſcoverer. But whoever this was, it may be inferred from our late Acquaintance with it, that it was not diſcovered untill ſome Centuries after the Appearance of the Diſeaſe. Our earlieſt Informations of it were from two Italian Phyſicians. TIMONI addreſſed his Account to the Royal Society from *Conſtantinople* 1713, in which he ſays, the *Circaſſians* and *Georgians* had intro-

introduced it into that Capital upwards of forty Years before.* He obſerves, the more prudent were cautious of uſing it at firſt, but that its ſubſequent Succeſs ſoon extinguiſhed all Suſpicion; Perſons of every Age and Temperament, and both Sexes, having ſubmitted to it without one dying; and this in the worſt Conſtitution of the Air, when the Doctor atteſts from his own Obſervations (having reſided there eight Years) half of the naturally infected died. In ſhort his Eulogies of it are very high, and his Precautions too few. The former indeed might be even neceſſary to encourage the Subjects of the Diſeaſe, to ſubmit to ſo novel and paradoxical a Protection from its ſeverer Degrees, as the immediate Reception of its Seeds into the Circulation: But the latter may have occaſioned too general, too crude and precipitate an Application of it in our firſt Inoculators, as if a Miſcarriage had been an Impoſſibility, which Experience ſoon contradicted.

PYLARINI's Letter goes as far back as the Year 1701, when he was at *Conſtantinople*; and where, after examining into ſeveral Facts with Regard to the Practice, he conſented to the Inoculation of four Sons of a *Greek* Nobleman of his Acquaintance. He ſays the Inventor is

* This makes the Duration of it in *Aſia* and *Europe*, and conſequently the Experience had of it in 1760, to be an Experience of about ninety Years. The Cuſtom of *buying* and rubbing in the Small Pocks in *Wales* ſeems of near 160 Years ſtanding, by ſuch Evidence as we have to inveſtigate it; which ſee in a Note to Section VIII. or the Reference in the Index to — Infriction,

is unknown ; but that it firſt prevailed in *Greece*, particularly in *Theſſaly*. This Account is wrote with more Circumſpection than the former, as he affirms the Symptoms, in Conſequence of Inoculation, to vary according to the Diverſity of Temperaments; and acknowleges the eldeſt, of 18 Years old, had a very malignant Fever and very bad Symptoms, being ſcarcely out of Danger the 14th Day. He obſerves, that at the Time of his Writing, all but the more timorous were fully convinced of its good Effects, but that the *Turks*, as Fataliſts, rejected it.

I found by a Manuſcript of the late Sir HANS SLOANE's, which Serjeant RANBY favoured me with, that PYLARINI addreſſed his Letter to the Royal Society, of which Sir *Hans* was Preſident at that Time, in Conſequence of one the latter ſent to Conſul SHERRARD then in *Turkey*, to enquire into the Practice and Succeſs of Inoculation. But notwithſtanding the Date of PYLARINI's Anſwer, there was no further Notice taken here of the Practice, as the Manuſcript obſerves, 'till it became effectually recommended to the Attention of the Public by the following Occurrence : to which however we may premiſe, that the laudable Curioſity of that worthy and benevolent Phyſician, which has enriched our Iſland with ſuch a valuable Collection of the Productions of Nature, was a very early Cauſe of our Information on this ſalutary Article.

About the Year 1717, the very ingenious Lady MARY WORTLEY MOUNTAGUE, Wife of the

the *Engliſh* Ambaſſador at *Conſtantinople*, having carefully enquired into all Circumſtances of the Practice, had her Son, at the Age of ſix, inoculated there: he had about 100 Puſtules, and quickly recovered. And in *April* 1722 her Daughter, about the ſame Age, was the firſt free Subject inoculated in *Great Britain*. She had fewer than her Brother, and played about the Room chearfully under Eruption. Here then we may * date the happy Commencement of Inoculation, the memorable *Aera* of a great corporal Salvation from the Mortality of the Small Pocks throughout the *Britiſh* Dominions. And when that noble Lady's very pretty poetical Compoſitions may be overlooked, from the Fluctuation of Language, and thro' the Waſte of Time, that excellent Senſe, which prompted her to more than female Reſolution, in Tenderneſs for her Offspring, and proved in its Conſequences an Introduction to this moſt ſalutary Practice, ſhall do unfailing Honour to her Memory; and *England*, that is ſaid to have been termed abroad the Paradiſe of Women, ſhall exult on this Occaſion, with the juſteſt Gratitude to one, *Dux Femina Facti*.

But

* This was ſubſequent however to the Inoculation of the Malefactors in Newgate, which was performed *Auguſt* the 9th 1721. It is alſo affirmed, that Inoculation was practiſed in *New England* rather earlier than here, in Conſequence of ſome Correſpondent's tranſmitting PYLARINI's or TIMONI's Account of it to Dr. MATHER, a Clergyman there, who encouraged Dr. *Boylſton* to undertake it. Whatever the preciſe Truth of this, not very important, Circumſtance may be, it is certain they practiſed it very early in *Boſton*; which will appear in the next Section.

But it remained for Royalty itſelf, for his Majeſty, King GEORGE the Iſt, and his late Majeſty GEORGE the IId, both of worthy Memory, with his Royal and moſt diſcerning Conſort, then Prince and Princeſs of *Wales*, to compleat and eſtabliſh by their propitious *Auſpices*, and generous Example, a Practice ſo happily introduced. For after the Experiment had been made, under the Sanction of the Royal Authority, on ſix condemned Malefactors ſucceſsfully; five of the Pariſh Children of St. *James*'s were happily inoculated; and a few Families of Diſtinction having the Operation performed on their Children with the deſired Effect, their Majeſties had all their Royal Iſſue then living * inoculated, with an Event truly grateful to every Friend of Reaſon

* The MS already mentioned ſays, it was done in Conſequence of the late Princeſs Royal of *Orange* being then very dangerouſly ill of the natural Small Pocks, which affected her late Majeſty with great Solicitude for the reſt of her Children: and that on Sir HANS's anſwering her Enquiries concerning Inoculation in Approbation of it, but at the ſame time expreſſing his Diffidence, (from his Uncertainty of the Conſequences) to perſuade or adviſe the Trial of it upon Patients of ſuch Importance to the Public; Her Majeſty, then Princeſs, aſked him, if he would diſſuade her from it, to which he anſwered, he would not, in a Matter ſo likely to be of ſuch Advantage. To this her final Reply was, that it ſhould be done then, and ſhe immediately ordered him to wait on the King, who had alſo commanded his Attendance on the Occaſion. Sir *Hans* obſerving, to the King, the Impoſſibility of being certain, that no dangerous Accidents ſhould enſue from exciting ſuch a Commotion in the Blood; His Majeſty replied, that ſuch might, and had happened to Perſons, who had loſt their Lives by bleeding in a Pleuriſy, and taking Phyſic, tho' with the utmoſt Care: and upon Sir *Hans*'s ſuppoſing the few ill Accidents from this Practice might be as fortuitouſly circumſtanced, the Inoculation of the Royal Family was reſolved on, and happily performed.

Reaſon and Liberty. In this Reſpect the Conduct was ſurely worthy the Parents of their future political Family, by admitting the Practice into their natural one, ſince the Maxim of *Regis ad exemplum totus componitur orbis* is generally true: * as if the divine Providence had, in this Reſpect, diſtinguiſhingly conſtituted their illuſtrious Houſe its own ſubordinate Guardians of the natural Health of their Subjects, as well as Reſtorers of the political Vigour of the *Britiſh* Conſtitution, which had been in ſome doubtful Circumſtances before their critical Acceſſion to this Diadem. But this by the Way, this Sally of juſt and poſthumous Admiration, void of the remoteſt Intention of Flattery.

It is difficult however not to reflect here on the very different Reception of this Practice in *Turkey* and *England*. PYLARINI informs us, that when it firſt reached *Conſtantinople*, it lay, as it were, concealed for ſome Years; being rarely uſed, and but among the meaner Sort. Its Tryal here was highly authentic and ſolemn: never was Mercy more judiciouſly exerciſed;

 its

* Dr. DELACOSTE in his *Lettre ſur L'Inoculation de la petite Verole*, printed at *Paris* 1723, excepts the *Engliſh* particularly from this Habit, where he obſerves, 'that the greateſt Part of the *Engliſh* Nation followed the wiſe Example the Royal Family ſet them on this Occaſion; though not from a Spirit of Complaiſance for their King, *of which*, he adds in Italics, *one cannot ſuſpect that Nation*, but out of pure Conviction.' It would not have been very adroit indeed for this *French* Author, in a Letter addreſſed to his Moſt Chriſtian Majeſty's firſt Phyſician, to have aimed at a critical Diſtinction of the very different Regards, which a great and rational Majority of the *Engliſh* have paid to their truly Patriot Kings, and their Reverſes, for a few late Centuries.

its Diffuſion was quick and conſiderable; and its Patrons were of the firſt Diſtinction. This was really acting up to the Dignity of reaſonable reflecting Creatures; to try and be determined by the very general Event of the Method, and to be ſuperior to all ſenſeleſs Prejudices from the Obſcurity of the Inventor, or the humble Circumſtances of the firſt Subjects of the Invention. It was a ſtrong Contraſte to the Conduct of the Diſtreſſed in a beſieged City, who are ſaid to have rejected the good Advice of the wiſeſt Man among them, becauſe the Man was Poor. And in this Point (as if there really was in Nature an inſeparable Connexion between Riches and Wiſdom) no ſmall Majority of the Moderns ſeem to harmonize with theſe ſame beſieged; by profoundly enquiring, who, whence, and of what Account and Circumſtance the Propoſer of any Improvement is; with other collateral Queries, equally tending to illuſtrate the Truth or Falſehood of a Propoſition, or the Merit or Futility of a Work, which muſt beſt appear from the moſt abſtracted Examination of itſelf. And yet ſuch is often our Biaſs to meer Names and Notions, that Dr. WAGSTAFFE, who was accounted a Man of Wit, was ſo very indifferent a Philoſopher, as to think 'Inoculation's being performed by Women, and among an illiterate People, ſo ſtrong an Objection to it, that he was apprehenſive Poſterity would ſcarcely credit its Reception into the *Britiſh* Palace.' His (a) HIPPO-

(a) Μη οκνειν παρα ἰδιωτων ισοξειν, ἠν τι δοκει ξυμφερον. Lib. de Praecept.

HIPPOCRATES might have inſtructed him, that Experience from every Quarter is to be regarded; and his unwarpt Underſtanding muſt have ſuggeſted, that the Facts, the general Events of the Practice, merited a little of his Conſideration. Perhaps we may not prove more unlucky Prophets in apprehending, that a very extenſive Poſterity, and ſome other Palaces, may gratefully applaud the maſculine Wiſdom and Reſolution, and imitate the exemplary Conduct, of the *Britiſh* Palace, in this Particular.

In effect, ſince the former Edition, this Preſage has been partly accompliſhed, by the Court of *Sweden*'s having ſent the ingenious Dr. SCHUTZ here, to inform himſelf on this Practice now eſtabliſhed in that Kingdom, under the moſt prudent Regulations. Some States in *Germany* have countenanced it, by cauſing and publiſhing a Tranſlation of that Edition, or of its moſt neceſſary practical Parts, in the * *German* Language. A happy Concluſion of the preſent War will probably confirm the Practice there, at leaſt in the Proteſtant States, from humane and political, and perhaps alſo from religious, Motives. Of ſome Advances towards it in *France*, where a Prince and Princeſs of the Blood have been ſucceſsfully infected by Art, I may ſpeak more particularly in another Section. Let it ſuffice to add in this, that we cannot reaſonably doubt a

* I ſaw a MS Tranſlation of the greater Part of it into *French* at *Paris*: but as it had not, in my Judgment, fallen into the Hands of the moſt eligible Tranſlators, I ſaid little or nothing to promote its Publication.

more extenſive Completion of this Preſage; ſince His Majeſty, when lately Prince of *Wales*, from that Love of his Species and of his Country, ſo amiably legible throughout his Royal Highneſs's whole Preſence and Demeanour, had graciouſly condeſcended to aſſociate the benign Title of Patron of Inoculation, to the many great ones which then beſpoke Him, under GOD, the Continuer of the Honour and Proſperity of the *Britiſh* Empire to future *Britons*. How eſſentially great, in having thus realized his Aſſent to that moſt honeſt Axiom in Politics, *Salus populi ſuprema lex*, in its literal Preciſion, as well as in its utmoſt Latitude!

Theſe, with the Omiſſion of a Word or two, were, very truly, the Suggeſtions of a former Year. — But a conſummate Exertion of ſuch Virtue in the ſupreme Dignity infuſes that ſublime Reſpect and Admiration, which chaſtely delight in the contemplative Reſerve of Silence, and decline every inadequate Embelliſhment of Words; as ſuch grateful and glowing Emotions of the Mind are more eaſily conceived than expreſſed, at once with ſufficient Juſtice and Delicacy.

SECTION V.

Whether Inoculation conveys the genuine Small Pocks? If with leſs Danger and Difficulty than the natural Diſeaſe? And if thoſe once infected by Inoculation are ſecure from a ſecond variolous Infection?

THE conſiderable Oppoſition this important Practice encountered on its Introduction here was extremely natural. It was very right to make every poſſible Objection to it, that was not plainly trivial and cavilling; and highly prudent to wait for its certain, and even habitual Succeſs, before a general Concurrence in it could be reaſonably deſired. Hence the late diligent and ingenious Dr. JURIN employed himſelf, for many ſucceeding Years, in a ſtrict Attention to the Evidence which Facts ſhould give of it; publickly ſoliciting all Perſons employed, or concerned, in it, to favour him with exact and impartial Accounts of its Effects and Events. He rightly ſuppoſed that its certain Propagation or Diſuſe muſt enſue, according as a numerous Series of Facts ſhould ſubſcribe to the affirmative

or negative Solution of the 2d and 3d Queries prefixed to this Section; to which I have premiſed the firſt, as ſome Oppoſers of the Method, and particularly Dr. WAGSTAFFE, affirmed it did not give the genuine Diſeaſe. And tho' the contrary of this ſoon became indiſputable in the main; yet as a few of the Inoculated had no enſuing Diſeaſe; and as a principal Purpoſe of this Work is to inform all Practitioners, who are hitherto unread on this Subject, at home and abroad, and may hereafter be neceſſarily employed in it, of as much as is material of the Hiſtory of Inoculation, and to initiate them, as it were, in its Rudiments; we ſhall firſt preſent the Evidence of its giving the true Diſeaſe, which being once evinced, a Security from a Return of it muſt follow as a neceſſary Conſequence, if it really be a true Characteriſtic of it, never, or ſcarcely ever, to affect the ſame Subject twice.

The general Teſtimonies of the two Phyſicians at *Conſtantinople* have been occaſionally recited. Mr. MAITLAND aſſures us, that three learned Members of the College ſaw Miſs WORTLEY playing about the Room with the Small Pocks on her. He affirms, ſeveral Perſons of Diſtinction could atteſt this Fact; and that one of the Phyſicians (Sir JOHN SHADWELL I have heard) had his Son as happily inoculated the following Month. The condemned Malefactors were inoculated in the Preſence of many eminent Phyſicians, Surgeons and others, whom we muſt ſuppoſe ſufficiently attentive

to the Progreſs and Event of it. Beſides the ſame Operator inoculated eight others in different Parts of *England* the ſame Year 1721; and publiſhed Certificates ſigned by the Parents, Friends and Attendants of the Inoculated, atteſting the Reality of the Diſeaſe reſulting from the Operation. It were eaſy to accumulate Evidence on this Point from Dr. NETTLETON and many others; but what eſtabliſhed it beyond all Conteſt, from the Oppoſers own Conceſſion, was their clamouring ſoon after, that the Inoculators * diffuſed the natural Diſeaſe; which was certainly their beſt founded Objection to it: ſince Mr. MAITLAND ſoon acknowleged, that ſix Servants of Mr. BATT's in *Hertfordſhire*, whoſe Child he inoculated, and which they frequently careſſed under it, were all ſeized at once with

* Tho' this may be certain, and I have known an Attendant thus infected from an inoculated Child, who had leſs than fifty mild Puſtules, and ſcarcely any perceivable Smell; yet we cannot juſtly ſuppoſe, that any Number of the Inoculated emit an equal Quantity of circumfluent *Effluvia* with the ſame Number of Perſons naturally infected, both Parties taken juſt as they preſent: ſince the Denſity of Contagion, in the ſame Extent, muſt be in Proportion to the viſible Quantity of the Diſeaſe, and the perceivable Degrees of the variolous Scent. Miſs TIMONI lay between her inoculated Brother and Siſter, as the infected Servant did with my little Patient. Mr. BATT's Child was handled by the Servants it infected; nor is it very certain, that all or any of theſe Infections would have enſued from a curſory Look or very ſhort Viſit, which is often ſufficient to catch it from a Patient naturally infected. Hence it clearly follows, that if every Subject annually ſeized with the Small Pocks in *London*, *&c.* was inoculated inſtead of being naturally infected, the Quantity of the circumambient Contagion muſt be leſs; and ſhould it happen to be diffuſed over the ſame Extent of Atmoſphere, that Extent muſt be leſs impregnated with the infectious Particles. Inoculating, where the Diſeaſe does not already exiſt, is differently circumſtanced.

with the natural Diſeaſe, of which one died. He ſays they never ſuſpected them to be catching, which it is too probable he affirmed to them; as he honeſtly acknowleges his Surprize at it, and that he did not think them ſo himſelf. It appears a little inconſiderate here, for a Perſon who had ſeen the *Pus* infuſe the manifeſt Diſeaſe and its Symptoms, not to infer, that it might impart at leaſt a gentle Degree of Infection, which the mildeſt Portion of the natural Diſeaſe has been ſuppoſed by ſome to do. But probably he inferred the contrary, from the *Greek* Woman's rejecting the Pock of the Inoculated. Nevertheleſs his Merit, in being an early Inſtrument in the Propagation of it, ſhould qualify any of his Miſtakes, which occurred during the Infancy of the Practice; eſpecially when we conſider, what his Share of medical Erudition probably was. Dr. NETTLETON and ſome others ſoon imagined, but without making a Point of it, that the artificial Diſeaſe tranſmitted a very gentle Infection, which happened to the Attendant mentioned in the preceding Note. But however that may be, which pretty certainly depends on the State of the Body receiving it, the learned and cautious Dr. FRIEND at length acknowleged his Conviction of its giving a true Pock. It is pleaſant to obſerve, how thoſe, who firſt denied this, came by Degrees to admit, that it gave ſomething like it; at length to own that it gave the true Pock; and at laſt that it ſometimes gave a favourable one. They appeared like compelled and unwilling Evidences, grum-

grumbling out their half Aſſent to the Truth: or, like the determined Defenders of a beſieged Place, they did all that Obſtinacy could effect, till the unſleeping Artillery of Facts beat them from their untenable Holds. Many Years have intervened, many thouſand *Britiſh* Subjects have been inoculated; and at preſent our warmeſt Zealots againſt the Practice never heſitate to admit its imparting the genuine Small Pocks.

That the Peril, the Loathſomeneſs and Difficulty of it in this Way were greatly leſs than by the natural, we are poſitive no Perſon, who has impartially peruſed all our Ligitations on it, can doubt for a Moment. Its Continuance and Increaſe to this Period amongſt us is ſuch an Argument of its much ſafer and gentler Operation, as is equivalent to a Multitude of Teſtimonies that might be produced in its Favour. For, as I have elſewhere obſerved, it was impoſſible, from the Nature of Men and Things, that any Succeſs, ſhort of an extraordinary one, could have continued it down to us. A favourable *Ratio* of it, from the ſtricteſt Calculations, muſt have failed to repreſs the Counter-Efforts of Prejudice, Superſtition and Obſtinacy; and, I may juſtly add, of Faction too. Had it only appeared, that three, four, or even five died in the natural Way, for one by Inoculation (tho' the leaſt of theſe Advantages were no contemptible one) it is clear with me, the greateſt of them would not have eſtabliſhed it with us ſo ſoon, and

perhaps never. Ruſhing into the Embraces of a Diſtemper, as a Security from its worſt Effects, had naturally ſomething in it very indigeſtible and alarming at firſt: but the ſalutary Conſequences of Inoculation have abundantly demonſtrated of it, what was fabled of the Spear of *Achilles*, that it cures the Wounds it inflicted.

But tho' we require no Repetition of ſuch Evidence ourſelves, it may operate, by the divine Favour, to the future Preſervation of many. TIMONI undoubtedly ſays the very utmoſt that can be true, when he affirms, that no one ever died of it; and this is the more ſurprizing, as he adds, that one half of thoſe ſeized about the ſame Time, in the natural Way at *Conſtantinople*, died. Such a Diſproportion muſt have converted the moſt obſtinate Fataliſt. He acknowleges indeed the Death of two of the inoculated, many Days or Weeks after the Termination of the Small Pocks; but attributes the *Cataſtrophe*, in both, to other Diſeaſes, or morbid Propenſities, plainly exiſting when the Operation was *inflicted*, as I may term it *here*. There is ſome Degree of Candour in acknowleging the Facts, tho' not the utmoſt we could wiſh for on ſo intereſting a Point. He ſhould have obſerved, it was improper to inoculate them under ſuch morbid Circumſtances, which might probably have warded off a natural Infection. Were we to ſuppoſe Inoculation here an epic Perſonage or Cha-

racter,

racter, and then to inveſt him with as much Wiſdom as good Fortune, he muſt have declined, or deferred, theſe particular Conflicts, into which he ſeems to have been injudiciouſly compelled here. But if TIMONI himſelf preſcribed theſe injudicious Inoculations, which does not appear, and is uncertain, the *whole* Truth required his embracing ſuch a Mortification, as very few have the Fortitude and Generoſity to do for the Benefit of others. We are to ſuppoſe however, that he knew no others who died in Conſequence of it, which theſe may probably be ſaid to do, and that he was informed none did.

PYLARINI's Commendation of it, which correſponds very well with our Experience, ſays, ſeldom or never has any bad Conſequence been obſerved to happen on this Occaſion; tho' it has been performed on all Ages, Sexes and Temperaments. We have had Occaſion to obſerve the Succeſs of Inoculation in the five Malefactors (the ſixth being inodorated) under the moſt diſcouraging Situation and Circumſtances, and tunnelled, as it were, with little Streams of *Pus*. But to ſpeak ſummarily, we are informed by Dr. JURIN, that 182 Perſons were inoculated in 1722, of which the Anti-inoculators affirmed two died. Their Death was certain; the Inoculators were for aſcribing it to other Cauſes; but the faireſt and ſhorteſt Way is to charge them to the Account of Inocula-

tion; which makes the Deaths by it, for that Year, one in ninety-one. Dr. NETTLETON's accurate Account of the Deaths by the natural Diſeaſe then thro' many Towns in *Yorkſhire* was, upon an Average, 19 out of 100, or very nearly one in five.

It were eaſy to tranſcribe the annual Events of Inoculation, and of the natural Diſeaſe from the Accounts Dr. JURIN annually publiſhed from the years 1721 to 1726 incluſive. But as Dr. SCHEUCHZER has added the Numbers of the Inoculated here in the Years 1727 and 28, and the Event of this Practice then to the former, we ſhall chuſe to preſent our Readers with a ſummary View of its Conſequences here for the firſt eight Years, from his Tables; after obſerving, that the *Ratio* of Deaths in both Ways varied ſomewhat in the different Years.

A Table containing the ſeveral Ages of the Perſons inoculated in Great Britain, *from the Year* 1721, *to the End of the Year* 1728; *together with the Succeſs of the Operation, in the ſame Manner with thoſe publiſhed before.*

Age.	*Perſons inoculated.*	*Had the Small Pocks by Inoculation.*	*Had an imperfect Small Pocks.*	*No Effect.*	*Suſpected to have died of Inoculation.*
Under 1 Year.	24	24	00	00	2
1 Year to 2	34	33	00	01	4
2 to 3	65	65	00	00	1
3 to 4	91	88	00	03	1
4 to 5	65	63	00	02	1
5 to 10	257	249	03	05	3
10 to 15	140	131	01	08	1
15 to 20	104	95	03	06	2
20 *&c.*	110	91	06	13	2
Age unknown.	7	6	00	01	0
Total	897	845	13	39	17

We ſhall juſt obſerve here, that the Deaths of all who were inoculated within that Term were one in fifty-two, or a ſmall Fraction over 52; of thoſe who took an inconteſtible Small Pocks (ſince it had no Effect on 39) one in 50, or a ſmall Fraction under 50: and if we add the 13, who are conſidered as having had an imperfect Small Pocks, the Deaths will be one in 50, with

with much ſuch a Fraction above it. It is remarkable however, that we never heard of any one of the laſt having taken a ſubſequent Infection. We ſhall tranſcribe nothing advanced by the Advocates for Inoculation, nor even by any Moderators in the Controverſy, to prove, or to attempt to prove, that the Deaths of ſome, or of any one, failing after Inoculation, ought to be aſcribed to any other Diſeaſe or Indiſpoſition; or even to any previous natural Infection, to which it is certain ſome of them had been expoſed. During the ſame eight Years the Deaths by the natural Small Pocks were, *communibus annis*, by Dr. SCHEUCHZER's Tables, one twelfth Part of all the Deaths occurring within the Bills of Mortality.

The Rev. Mr. MATHER's Letter to Dr. JURIN dated March 10, 1721, ſuppoſes 300 inoculated in and near *Boſton*, *New England*, out of which he ſays five, or at moſt ſix, died, which he is very willing to impute to previous Infection, or other Circumſtances. But we ſhall find by the following Table from Dr. BOYLSTON there were 18 leſs inoculated: except we chuſe to apply twenty or thirty more (which Capt. OSBORNE ſays he ſuppoſes might be inoculated, but of whom he can give no Account) to make up the 300 computed by Mr. MATHER.

Their

Their Ages.	*Persons inoculated.*	*Had the Small Pocks by Inoculation.*	*Had an imperfect Small Pocks.*	*Had no Effect.*	*Suspected to have died of Inoculation.*
From 9 Months to 2 Years old.	06	06	00	00	00
2 to 5	14	14	00	00	00
5 to 10	16	16	00	00	00
10 to 15	29	29	00	00	00
15 to 20	51	51	00	00	01
20 to 30	62	60	00	02	01
30 to 40	44	42	00	02	01
40 to 50	08	07	00	01	00
50 to 60	07	06	00	01	02
60 to 67	07	07	00	00	01
Total	244	238	00	06	06
Inoculated by Drs. *Roby* and *Thompſon* in *Roxbury* and *Cambridge*.	36	36	00	00	00
Total	280	274	00	06	06
Two inoculated by *Boylſton* after his Table was printed off	2				
	282				

This makes the *Ratio* of Mortality by Inoculation in *New England*, in the Year 1721 and 22 exactly one in 47 : but to be impartial, it is not unlikely that ſome of the deceaſed might be previouſly

viouſly infected, as they were conſiderably expoſed: and if we turn our Eyes to the Ages of ſome of the Inoculated, we ſhall not be ſurprized to find the *Ratio* ſomewhat leſs favourable in *New England* than in *Old*. *Boylſton* informs us that in 1721, and the Beginning of 1722, 5759 Perſons had the natural Small Pocks in *New England*, of whom 844 died. The Numbers inoculated in *Old* and *New England*, within eight Years from the Introduction of the Practice, were 1179, of whom died 23, or one in 51, with a ſmall Fraction above 51. And as the natural Diſeaſe, on a fair Allegation, carried off in both Countries, during that Term, full one in ſix; there muſt have died by it, out of the above 1179, ſuppoſing it to have treated them as it did the reſt, full 196, from which deducting the 23 deceaſed, 173 Lives will remain as the Number preſerved by Inoculation. But we muſt remark, that ſome Allowance is to be made for 45 in both the Tables, on whom Inoculation had no Effect. And this may ſuffice as an impartial Exemplification of the good Effects of that Practice in its Infancy, as we may ſay, amongſt us.

Notwithſtanding which, as a Son of the DUKE of *Bridgwater*'s, and another of the EARL of *Sunderland*'s, with a few others of Condition, were among the Deceaſed, the manifeſt Advantage of the Practice ſeemed inſufficient to extend it, or even to maintain its Ground: ſince we find a Dormancy or Stagnation of it for ſome enſuing Years, and no Perſon continuing the annual Account

count of its Events, which ſome probably would have done, if any thing like the former Numbers had annually ſubmitted to it. This is ſufficient however to demonſtrate the much greater Influence, which the Recovery or Loſs of a Perſon of Birth and Rank may have upon the Fate of any Practice, than its good or bad Event among People in humbler Life; while that of the meer *inops, inhumataque turba*, the meer Populace, is little heard of, and leſs adverted to. But tho' the Death of Perſons of Birth and Condition, where their Virtues and Abilities correſpond to their exalted Situation, be certain and ſignal Loſſes to any Kingdom or People; yet Phyſic, which implies Philoſophy, and does not conſider Heraldry or Station among its eſſential *Praecognoſcenda*, can only eſtimate the general Convenience or Inconvenience of any medical Practice, from the Numbers that recover, or fail, by it; or, as our homely Phraſe expreſſes it, merely by telling Noſes.

But to come to later Times and a different Climate, the Small Pocks was brought from *Africa* into *South Carolina* in the Spring of 1738. And it was very generally agreed, by the Friends and Opponents of Inoculation, after the Diſeaſe had finiſhed its Courſe there, that 1000 Perſons white and black, young and adult (tho' the Want of an exact Regiſter is truly to be regretted) had undergone the Operation there. In 1743 I publiſhed a ſmall Eſſay at *London* on this Practice, ſubjoining an *Appendix*, which con-

tained the moſt faithful Account of its Event abroad, for which my Memory of ſo recent an Occurrence then tolerably qualified me. This, I have heard from different Perſons, had been of ſome effectual Tendency to revive the Practice; whence I have the Satisfaction of conſidering myſelf as an Inſtrument, however remotely, of the Benefit which many have ſince received, from a judicious Application of it, by others. To be certain of avoiding all Exaggeration, I eſtimated the Subjects of Inoculation but at 800; tho' Mr. MOWBRAY, who introduced it there, aſſured me, he had inoculated full 450. Four other Practitioners ſoon abetted, and were liberally employed in, the Practice: a fifth at length acceded, and one entirely declined it from religious Scruples. That Performance contained a very ſummary Account of the Caſes of four or five out of the eight Patients, who died after Inoculation: but as I am ſince convinced I omitted one, tho' very unconſciouſly, I embrace this Opportunity of rectifying that Omiſſion. Yet as every one from that Province thought the Number of the inoculated under-rated, I preſume it will not be unfair to conclude, on the whole, that one died out of every hundred inoculated there; or ſuppoſing but 800 inoculated, it will be as one in 89. And if it be conſidered, that a great Majority of theſe were thus voluntarily infected during the raging Heats of *June*, *July*, and *Auguſt* in a Climate, where the Sun is within nine Degrees of the *Zenith* at the Solſtice;

and

and in a ſandy, flat and marſhy Situation, during which Term the natural Diſeaſe certainly killed at leaſt every fifth it ſeized, the *Ratio* will be greatly in Favour of the Practice. That the Inhabitants were fully convinced of this is manifeſt, from few, very few Subjects of this Diſeaſe having arrived from thence into *England* ſince that Time, without ſubmitting to the Operation. As well as my Memory ſerves me, the Small Pocks was carried into *Philadelphia* in *Penſylvania* a few Years after this, where the general Event of Inoculation was ſaid to be ſtill more benign; but having had no authentic Information of Particulars from any Eye Witneſs of the Facts, I only mention this general Rumour, which I never heard materially contradicted. The general Eſtimate of the *Tripolitan* Ambaſſador here, in the Reign of GEORGE the Iſt, was, that not two died out of each Hundred inoculated at *Tripoli*; but thirty out of every Hundred naturally infected.

Dr. MEAD aſſures us, in his Chapter on this Practice, it was certified to him by a very creditable Witneſs, (1) that a Gentleman in St. *Chriſtopher*'s inoculated 300 Slaves himſelf, from the Age of five to thirty, without loſing one. Such Accounts reflect ſome Credit on TIMONI's Report of its unfailing Succeſs at *Conſtantinople*. Our Information of the Event of the Small Pocks in *New England* a few Years ſince makes 5059 white Perſons naturally infected, of whom 452

 died,

(1) De Variol. P. 80.

died, which is, to avoid a Fraction, one in eleven, no unfavourable Proportion. Of 485 Blacks ſeized naturally 62 died, or full one in ſeven. Of 1970 Whites inoculated 24 died, or one in 82; of 139 Blacks 7 died, or very nearly one in 20; a very unuſual Mortality indeed by Inoculation; and which might induce us to ſubſcribe to Dr. MEAD's Obſervation of the *Africans* being more fatally obnoxious to this Diſeaſe; were it not ſtrongly contraſted by its extraordinary Succeſs among them at St. *Kitt*'s; and did we not find in Dr. SCHEUCHZER's Pamphlet the Death of three out of twenty-five inoculated at *Dublin* in the Years 1723, 24, 25, and 26, the much greateſt Proportion then ever known. We are informed indeed that two of the three were very ſickly, one but fourteen Months old; but ſuch Circumſtances, tho' mentioned to exculpate the Practice, effectually accuſe the Practitioners of it, under them. The Numbers of the Inoculated then in theſe three different Parts of *America* were 3209, of whom 40 died, or one in 80. Neither the Date of the Year, nor the Mortality of the natural Diſeaſe at St. *Kitt*'s, are ſpecified; but if we ſuppoſe it altogether in *America* as one in eight (the Medium between a fifth in *Carolina* and an eleventh in *Boſton*) a natural Infection muſt have deſtroyed, inſtead of forty, 401, whence 361 Lives may very probably have been preſerved by Inoculation at thoſe Times and Places.

This

This Preſervation of Life being the intereſting, the cardinal Point, let us recurr to *Great Britain*, ſince the late general Revival and Extenſion of this Method, where we ſhall find the Advantages of it extraordinarily augmented. Several Years ſince a very worthy and ingenious Phyſician at *Wincheſter* informed me by Letter, that in ſeveral Towns of *Hampſhire*, *Suſſex* and *Surrey*, about twelve Years ago there were near 2000 inoculated, of whom two only died, both pregnant Women, and admitting the Operation contrary to the Opinion of their Phyſicians. Since this Revival of the Practice too we find, according to a Note to the late Biſhop of *Worceſter*'s Sermon, that three very eminent Surgeons had inoculated above 1500, with the Loſs of three only. Serjeant RANBY has inoculated upwards of 1000 of theſe, out of which, I had his own Authority, that he never loſt one. The other Gentlemen were Serjeant HAWKINS, and Mr. MIDDLETON, Surgeon General to the Army. Of 134, moſtly Adults, inoculated at the Inoculation Hoſpital in 1751, and a few Months of 52, there was not a ſingle Failure. Mr. WINCHESTER, late Surgeon to the *Foundling Hoſpital*, informs me, that 186 of the Children have been inoculated, of whom but one has died. In his private Practice, which he aſſured me, amounted at leaſt to 370, he ſaid, he had loſt only a ſingle Patient.

And here I muſt beg leave to digreſs a little on the Objections of ſome who are averſe to Inoculation,

tion, and the Surmizes of others who are not, which ſuppoſe the Inoculators, in their long Catalogues of Perſons ſucceeding by it, to have omitted either the whole, or the greater Number of thoſe, who have miſcarried. To acknowlege the whole Truth on this Occaſion, ſome of thoſe immortal long Liſts, without a ſingle Exception, have exerciſed my utmoſt Faith; and I have left the Numbers recovered, as affirmed to me, to depend on the Credit and Veracity of the Relators: tho' I firmly believe no ſuch Numbers of Miſcarriages, as would importantly leſſen the great Advantages of this Practice, have been or could be ſuppreſſed by the Inoculators. I confeſs too at the ſame Time, that my ſerious Reflections on this Head have prevented my enquiring more importunately, into the Numbers inoculated by the ſeveral Practitioners of every medical Department throughout theſe Kingdoms; who would be equally at Liberty to anſwer my Enquiries, as each thought it convenient, or to cenſure them as officious and impertinent. Indeed I recollect, that on ruminating on this Point myſelf, I once imagined, it might be even better for the Publick, upon the whole, to remain unapprized, and, as it were, wholeſomely ignorant, of every Failure by this Method. But in this Imagination I could not acquieſce, having determined never to ſuppreſs any ſuch Failure under my own Conduct; as I maturely conclude, Mankind have a ſtrict Right to an impartial Hiſtory of all its Conſequences, that they may calculate both the Advantage and

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the Risk, for *some* Risk there certainly is, whatever the Love of Mankind may have induced the Benevolent to hope or affirm to the contrary. And I am certain that such a History of it, as there could not be the least just Pretext to charge with any Suppression, would prove the most effectual Means of extending the Practice, and of improving it also to the utmost human Perfection; if every Case that miscarried, with a just Description of the Patient in every pertinent Circumstance, and an Account of his Preparation and Treatment, were faithfully represented.

But besides the deceased supposed by the Anti-inoculists, to have been absolutely left out of the Inoculators Lists, the former also charge these with an Endeavour to screen the Practice, from having occasioned those Deaths which are acknowleged; by charging them to other Diseases, or to some unhappy Combinations and supervening Circumstances, in Acquittance of Inoculation. Dr. HAEN makes the most of this Indiscretion, not to call it the Insincerity, of the Inoculators; and observes very justly, that this Manner of arguing away the fatal Events of Inoculation, must be equally extended to those of the natural Disease; or if denied, must be denied to both. Assuming it therefore he proceeds, with some pleasant Ridicule and Exaggeration, to acquit the natural Small Pocks, from having killed a single one of the five only, which he lost out of 220 Patients in it. Not to detract in the least from this ingenious Physician's Skill and Address in this Disease,

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the Small Pocks of that Seaſon muſt have been of a very uncommonly benign Diſpoſition: it was ſuch as a Man would have wiſhed his Friends, and their Friends again, if of a proper Age, *&c.* to have been inoculated in. Had Dr. HAEN himſelf practiſed it at that very Juncture, it is not likely he would have loſt above one in 750, perhaps not in 1000, by which he had ſaved from 16 to 22 Lives: which it being his Duty, as a very conſcientious and able Phyſician, to ſave, we ſhall rejoice to hear he has diſcharged it, the next equally mild variolous Epidemic in *Germany*. This may repair, in ſome Meaſure, the preſent Carnage by War there; and alſo extinguiſh his Prejudice againſt Inoculation, merely by Eyeſight, which has effected the ſame Converſion in many others. But whatever his matureſt Reflections may urge him to in this Reſpect, we acknowlege there have been too many Efforts made, to diſguiſe and explain away theſe few ſiniſter Events. Perhaps one Cauſe of them has been the little Regard had to a due Conſideration of the fitteſt Subjects for Inoculation; or to a proper Preparation of thoſe who were leſs fit, which has often been decryed as unneceſſary or hurtful, from no benevolent nor publick ſpirited Motives. This Conduct has occaſioned no ſmall Diſagreement, between ſome of the moſt enlightened Approvers of this Method and ſome Practitioners of it; which laſt ſeem to conclude that Time unprofitably delayed, which delays their Reward; and ſo keep driving on to extend their Liſts, with an *Occupet extremum ſcabies—ne te ſit ditior alter.* But;

But to the Point, among many combined Diſeaſes that have been accuſed here, Worms perhaps have been the oftenеſt, from the frequent Inoculation of Children. This has been mentioned to me as the fatal Cauſe in more than one Inſtance; but as it has alſo been acknowleged in Print, I ſhall only cite a ſingle one from Mr. (now Dr.) FREWIN, who affirms, in his Theory and Practice of Inoculation, he has inoculated 300 in *Suſſex*, of whom but one died, which he endeavours to attribute to a Worm Fever. But admitting his Veracity with regard to the 299, this Endeavour were better omitted. For each deceaſed Individual ſuppreſſed, which the Oppoſers of Inoculation ſhould diſcover, they would readily ſuppoſe a Dozen, if not a Score, which they would conclude to have been effectually concealed from them. And for any Attempts to aſcribe the known Fatalities to other Cauſes or Accidents, they have been, in general, truly frivolous and contemptible: For if the inoculated Small Pocks were ſuppoſed to excite the before inactive Cauſe of ſome fatal Diſeaſe in the Habit; or ſuppoſing it only to introduce a Delirium that occaſioned the Patient, if unwatched for a few Minutes, to jump from a high Window, and daſh his Brains out; tho' Inoculation could not be ſaid *directly* to have killed him, it muſt be allowed to have principally *conduced* to it, and to have been the *cauſa cauſæ*, as they term it, of his Death. In ſhort ſome Inoculators have been injudiciouſly bigotted in theſe Reſpects; when the plain *Ratio* of

Mortality by the natural Diſeaſe, and the Loſs of every Individual, who died from the leaſt apparent Conſequence of Inoculation, are ſufficient to convince and determine every Man in his Senſes. A Letter from *Saliſbury* in 1753 informed me 422 had been then inoculated there, of whom four died. Now if we ſuppoſe the Number of *near* 2000 inoculated in *Hampſhire*, *Suſſex* and *Surry*, as it is indefinitely expreſſed, to be certainly 1500, the Numbers of the Inoculated mentioned in this Paragraph and the next but one above it, will amount to 4412, of whom the 12 died in Conſequence of Inoculation, being one in 367 at the neareſt. And as Self-love is much ſtronger than public or ſocial, perhaps it will admit of no long Debate, whether the Members of Phyſic, taken altogether, would deſire the Hazard by Inoculation to be leſs: as Navigators are ſaid to apprehend every Body's commencing ſuch, on the Diſcovery of the Longitude.

I ſhall not diſſemble my Knowlege, however, that a few more than thoſe admitted to have failed in the former Paragraph, have miſcarried in and near *London*, during this general Succeſs of the Practice; beſides ſome few I have heard of at a greater Diſtance from it: nor ſhall I conceal my private Belief, that a few more than I have heard of may have alſo failed under it. The four or five Years occurring between theſe Editions have not

* Theſe Numbers were erroneous in the former Edition, being there ſaid to amount to 4252 — to 10 — and to 425.

not been more exempt than the former, eſpecially the Year 1759, when the natural Diſeaſe was much ſeverer than uſual. This, altho' not in a more unfavourable *Ratio* than common, had its Influence in Proportion on the Inoculated, as breathing in the ſame Part of the Atmoſphere. In truth, there is little Doubt, but that even in thoſe Seaſons, when this epidemical Diſeaſe may be attended with no more than its ordinary Mortality and common Symptoms, a few Failures will occur, ſufficient to mark the Fallibility of the beſt human Judgment, in a very large Application of it. But it would be a very ſtrange Objection to this Practice to aſſert, that becauſe we cannot certainly preſerve every Subject ſubmitting to it, we ought not to preſerve as many as it may, and, under the divine Favour, undoubtedly has preſerved. We confeſs our Apprehenſion at the ſame Time, that this Security has not been aſcertained amongſt us to its utmoſt poſſible Extent, thro' the Temerity and indifferent Qualifications of a Few, who have too crudely, and with too little Precaution, hurried on the Practice of it. Hence have probably reſulted within theſe four or five Years, taking the whole Kingdom together, a few more Miſcarriages than uſual, and of courſe more Aſſiduity to evade or conceal them. It is but too natural to ſuggeſt, that wherever the Love of Money was the ruling Paſſion, every ſuch Practitioner would carefully avail himſelf of every Circumſtance, that might ſuppreſs or diſguiſe ſuch an ill Event, as would probably contract a valu-

able Branch of Practice. But as ſeveral of the Populace, tho' in a much leſs Proportion than at firſt, are ſtill averſe to this Practice, we muſt impartially infer, that their Exclamation on its ill Succeſs, and the Concern of the Relations and Friends of the Deceaſed, would very generally defeat the utmoſt Endeavours of the unſucceſsful Practitioner to conceal it.

But we ſhall have no Right nor Colour to apply ſuch Deceaſed, in Deduction from the favourable *Ratio* of Inoculation juſt ſpecified; ſince we have not ſpecified the Numbers inoculated by the ſame Perſons, and recovered, to oppoſe to thoſe who failed, we will not ſay from, but under, their Conduct. It is rather fair to ſuppoſe the Recovered in the uſual *Ratio* of Inoculation. I was informed by a ſtrict Account in 1753, that they had inoculated 309 at *Blandford* in *Dorſetſhire*, of whom three died. What they muſt have ſaved then will not be very difficult to compute. A Gentleman from *Oxfordſhire* aſſures me it has been equally ſucceſsful there. I have heard of many, indefinitely, inoculated in *Scotland*, within a few Years paſt, but of none deceaſed by it. I have heard the Practice is become very familiar in *Ireland*, and with a Succeſs very different from its earlieſt Events there. The ingenious Mr. SHARP, Mr. POTTS and many other eminent Surgeons within the Bills, have doubtleſs inoculated great Numbers ſucceſsfully: Perſons of inferior Note have not been without many Patients in the Method; and I might ſpecify not

a few I have fortunately attended here myſelf (except a young Negro Man mentioned Note † P. 63) all which muſt ſuperabundantly over-balance the Deceaſed by it, who may not have been named. And here it muſt be high Time to refer the different Peril, by natural and artificial Infection, to the Solution of our Readers, on the Amount and Credibility of the Evidences produced; which may at leaſt ſave others the Trouble of compiling, as we have done, in order to compare the future Succeſs of Inoculation with the paſt.

An Abatement of the Difficulty and Loathſomeneſs of the Diſeaſe, in Proportion to the Abatement of its Fatality, may be obviouſly inferred. But were a formal Proof required, it is conſiderably anticipated by the Evidence already produced to the Solution of thoſe Queries, with which it is blended. The Inoculators, the Patients, and their Attendants are ſo clear and unanimous on this Point, that I ſhall content myſelf with repeating here what I have abundantly ſeen and formerly ſaid, 'That it were endleſs to recite the Caſes of thoſe who recovered in a very eaſy unloathſom Manner: the very Liſt would be tedious and ſwelling, and, without any Injury to Truth, it may be affirmed, they were nineteen twentieths of thoſe who admitted the Operation.' This evidently ſuppoſes at the ſame Time, that all the Inoculated were not indiſcriminately viſited with equal Lenity, which was generally varied in Proportion to the Quantity of Eruption, as in the

the natural Diſeaſe, But a long Experience has made it very clear to me, that in equal Degrees of Eruption by Nature and Art, the Symptoms attending the latter are remarkably lighter: where there is ſuch a Quantity by Inoculation, which ſometimes happens, as to diſpoſe to a ſecondary Fever, of which I have ſeen a few Inſtances, the Ruffle is lighter, and its Duration leſs: and if about the ordinary Term of its Approach the Inciſions diſcharge more copiouſly, which they pretty generally do, there is very ſeldom a perceptible one, however plentiful the Eruption has been. On this Occaſion I have ventured, tho' with much Reſpect to his Memory, to diſſent from the late experienced Dr. MEAD, who thinks the Diſcharge from the Inciſions (which yet he inculcates us to promote) and the Suppuration of the Puſtules frequently crouding about them, too little to be of much Service in the Diſeaſe. For if it ſhall appear that the Diſcharge from the Orifices, on the Maturation of the Puſtules, is often ſufficiently variolous to convey the Small Pocks; and that Diſcharge has been obſerved by many Phyſicians and Surgeons to be conſiderably free in thoſe, who have had the leaſt Eruption and mildeſt Symptoms, we cannot well conceive the Diſcharge of ſuch variolated *Pus*, at a critical Seaſon, as inſignificant to the Patient, when we reflect how ſmall a Portion or Particle of it will infect. And this Circumſtance may poſſibly be no ill-founded Exception to that generally true

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Hippocratic Axiom of (a) no ſmall Diſcharge being critical; for tho' the viſible Quantity be comparatively ſmall, its Contents are innumerable and potent. The frequent Vaniſhing of ſeveral troubleſome, and ſometimes even threatening Complaints, upon a ſmall Eruption about the Lips, may alſo be pertinently conſidered here.

With Regard to the laſt Query, tho' we might very conſequently aſſume the future Security, in general, of thoſe infected by Art; yet ſince the Contrary has been affirmed in Print a few Years ago, we proceed to a Diſcuſſion of it. To recur here, as we have frequently done, to our firſt Inſtructors, PYLARINI ſays, that tho' the Inoculated had but a few Puſtules, they eſcaped future Contagion. TIMONI ſays ſtill further, there are ſome in whom no Puſtule ariſes, but the Places of Inciſion ſwell up into purulent Tubercles; yet theſe never had the Small Pocks afterwards, tho' cohabiting with thoſe infected. Our firſt Proof of the Security of Perſons who had formerly the Diſeaſe, from a Re-infection by Art, was prudently made on *Richard Evans*, one of the ſeven Malefactors, who having had the natural Small Pocks in Priſon the Year before, was inoculated with five others, by 3 Inciſions abundantly imbued, and thus became the Subject of an *Experimentum crucis* on this Occaſion. Mr. MAITLAND informs us, that on the ſeventh from Inoculation he had no manner of Pain, Heat, or Redneſs in any

(a) Οὐδὲν ἐλάγιστον κρῖσιν.

any of his Inciſions, nor any Alteration otherwiſe; but that all of them, continuing pale from the Beginning, dried up on the ſixth. And that this Indemnity was equally certain, from having paſt through the artificial Diſeaſe, is evident, from authentic Certificates, that *Elizabeth Harris*, one of the inoculated in *Newgate*, ſoon attended two Patients in the natural Diſeaſe in *Hertfordſhire*, without receiving the leaſt Infection: And when MAITLAND publiſhed his Vindication againſt WAGSTAFFE, ſhe had attended above 20 with equal Security. Dr. NETTLETON ſays, the Inoculated have afterwards attended others in the Diſeaſe; and that often Children who had been inoculated lay in the ſame Bed with others in the natural Diſtemper, and all the Time of it, without Infection. To my own Knowlege Miſs BAKER, of twelve Years of Age, having been effectually inoculated, ſome Weeks after her ſpeedy Recovery, made a freſh Inciſion; and, with the Aſſiſtance of a young Lady, applied freſh Pock to it three ſucceſſive Mornings. About the eighth Day ſhe felt her Head ach ſlightly, and being frightened, revealed the whole Proceſs: but after lying down a little in her Cloaths, ſhe ſprung up ſaying, ſhe would not be ſick any longer, her Head-ach quickly vaniſhing, and no Fever, nor the leaſt Eruption or Diſorder enſuing. Now tho' the Event demonſtrated the ſuſceptible Fuel to have been expelled by the firſt Inoculation, yet the *Pus* ſhe ſo repeatedly infuſed was heterogeneous

as

as Matter, or ſuppurated Blood, and might excite ſome little Diſorder, previous to its Expulſion: and this probably the Matter from a ſimple *Phlegmon* or Boil would do. But with Regard to the Small Pocks, its Seeds here were ſown in an exhauſted Soil. In brief, as Dr. NETTLETON juſtly ſays, the *Quomodo*, the Manner, of Contagion makes no Difference in the uſual Indemnity: and the Continuance of the Practice to this Time is at leaſt twenty thouſand Evidences of the Truth.

And yet ſo unaccountable were the Operations of Bigotry and Malevolence (an Error and a Crime that too often concur) that in order to ſtrike at the Root of this Practice, and thence deprive their Fellow-ſubjects and their Species of ſuch a manifeſt Security from this Deſtroyer, many wicked Rumours were ſpread of the Reinfection of the Inoculated; for wicked they muſt have been in the conſcious Contrivers. One Report, that a Patient formerly inoculated had died afterwards of the natural Diſeaſe, produced a Letter from Dr. NETTLETON to Dr. JURIN, abſolutely diſavowing the Fact, but acknowleging the Death of an inoculated Infant of fourteen Months old. I have heard myſelf a great many Rumours of the Inoculated being naturally infected afterwards, which, upon Examination, always proved juſt as many Lies. But there never was a malignant one more impudently propagated, than that printed in an Appendix to Dr. CLINCH's hiſtorical Eſſay on the Small

Pocks. This was in a Letter from one *Jones* a pretended Surgeon at *Oſweſtry* in *Shropſhire*, which affirmed, 'he had tried Inoculation (which 'he could not approve) on ſeveral, and eſpe-'cially on a Child of two Years old, whoſe 'Small Pocks appeared in a Fortnight, and ſhe 'did well. But that in three Weeks after ſhe 'ſickened again of the Small Pocks, which came 'out as thick as ever was ſeen, but that at laſt 'the Child recovered.' This malevolent, and, as it appeared, ignorant Hypocrite did not heſitate to repeat the tremendous Name of GOD thankfully for his Bleſſing on this fictitious Inoculation, which was never performed. For on Dr. JURIN's writing to Mr. PARRY, Clergyman of *Oſweſtry*, and to Mr. TOMKIES a Surgeon there; though *Jones* ſolemnly averred the Inoculation to have been performed on a Child of his own, he would not ſhew the Inciſions, name the Perſon from whom he took the Infection, nor directly anſwer any of Mr. PARRY's Queries; but told him, that if Dr. JURIN would give him a *handſome Reward*, he would come to *London*, declare the whole Truth, and bring Witneſſes to prove it upon Oath; which the Doctor prudently declining to give, on a further, and we may ſuppoſe, a more earneſt Expoſtulation of Mr. PARRY's, he ſent up, in a moſt ignorant, miſpelt, and nonſenſical Epiſtle to Dr. JURIN, a Confeſſion, that he never inoculated any one in his Life, which indeed any Perſon may credit, even on his own bad Evidence. We have printed

ed the Scroll *literatim* at the Bottom of the Page as a Curiosity, and the very Quintessence of Ignorance. Moderate and common Absurdity is generally dull, but proves ridiculous enough in the Extreme to afford a momentary Diversion.

And indeed it may be justly affirmed, that a considerable Majority of those, who were thus

 vehe-

Letter from Mr. JONES *to Dr.* JURIN *(printed* literatim *from the Original.)*

SIR,

HAVEING considered vpon the Affaires of your Desire and cannot find my Self Able nor Capable to giue you Tru Account of the Inoculation of the Small Pox, nor am Soe well Instructed in the Art to Explain the Terminations to be publish'd, nor neuer did Designe or Delire it: but what I write was to my Son being he sent to me to Know my oppinion of the Inoculation: being his children have not had the Small Pox Then: and being it was to him in a Way of Preswation may be there is Some thing in the Letter more than all Truth: and all the Account That Euer I gaue was to him and noe Man Els: but neuer did I Design or Desire to make any Thing publick that was in it: how it came to you I cannot Tell: I am Sure it did not come vpon my Account: to Any man alive but to my owne Son and not to him to make A publick Game of it: but he Shall Loose more by it Then euer he can gain by Them that he gave Account of it. but what foolliſh fancy that was in his head I cannot Tell: If I had any Thing that was worth the publiſhing I Should write It Down with my own hand and witness to It. and Derection to you or Some other gentlemen for to giue There Assistance to publish it but, as for Really Inoculation I cannot giue you Account of it: for I am Ignorant in it for I neuer Saw it Done by any man In my born Days but what foolliſh Inuention I had in owne head I could not bring it to perffection and neuer gott a hapeny by nor neuer shall: Therefore I haue nothing to Say neither to the one or to the other but pray God to bless you all

Your Servant,

DA. JONES.

I cannot Say that I have Inoculat my owne Child nor any body Els because I do not know what Reall Inoculation is

Oswestry, March 14, 1725-6.

DA. JONES.

vehemently prejudiced againſt Inoculation were, like Mr. *Jones*, of the meer Multitude; or as Mr. DUMMER pleaſantly termed the Exclaimers againſt it in *Boſton*, of the *confluent Sort*. The laſt impotent Attempt to revive this Prejudice, of a ſecond Infection of the Inoculated, was in a Pamphlet intitled *Several Caſes in Phyſic*, with the Name of a ſage Fellow of the College prefixed to it. But as that Impoſture was ſeaſonably expoſed, it recorded this imaginary Re-infection leſs effectually, than the certain Errors and Prejudices of its concealed Author.

Nevertheleſs, as we have admitted P. 43. that Inoculation, when it took, was juſt an equivalent Protection from a ſecond Infection with the natural Diſeaſe, and no more: and as we have briefly ſtated the Evidence for and againſt ſuch Re-infection, from P. 36 to 42, ſuppoſing, in Reſpect to ſome few of the Authorities produced there, a *poſſible*, tho' very rare, Re-infection; ſo we ſhall here as impartially relate and ſubmit a recent Caſe on this Point, to the Conſideration of our Readers.

Mr. JOHN MOTTE born in *South Carolina*, about 20 Years of Age, of a ſomewhat darkiſh Complexion, and ſeemingly tenſe dry Fibre, was inoculated in *London* by Mr. LEE, Surgeon and Apothecary, *July* the 1ſt, 1757. I ſaw him the following *December* viſiting a Patient of mine recovering, by Inoculation, from a large Crop of the diſtinct Small Pocks. Mr. MOTTE had not a ſingle Pit from it, ſaying, to the beſt of my Recol-

Recollection, he had only eight ſmall Puſtules, and adding, he had never been ſick, nor confined to his Bed for it. * I remember I replyed, he had been very fortunate, and that I ſhould have had a conſiderable Anxiety about him, had I been to inoculate him. He ſeemed aſſured himſelf, and had been aſſured by his Surgeon, that he was intirely ſecure from a ſecond Infection; he received none at this Viſit, which was not a very ſhort one, and I believe was more than once repeated. The Small Pocks were brought into *Charles-Town* in *Carolina* in 1759, where he then reſided, and were, generally, of a ſevere kind. He is ſaid to have exulted ſo much on his ſuppoſed Indemnity from it, as to have exceeded his uſual Way of living, and went every where to viſit his Acquaintance who lay down with it; untill at length he ſickened violently, and died of a ſevere confluent Small Pocks. Now if he was infected in *England* by Inciſion (and I really took him for the

* Mr. Lee's Relation of this Caſe to me is — That Mr. *Motte* was inoculated at the Time above mentioned in the left Arm. That the Orifice inflamed a little, and that the Diſcharge was but ſmall. That the Matter with which he was inoculated was only four or five Days old. That on the ſeventh from Inoculation, he had a very ſlight Fit, (or rather *Vertigo* perhaps;) for when Mr. Lee attended him immediately on Notice of it, he found him without any Complaint, but was told by him, that he had felt an odd unpainful Giddineſs, which he ſuppoſed did not laſt one Minute. His Pulſe was quickiſh, as this Gentleman expreſſed it, the 8th and 9th Day (from which we are to ſuppoſe but the ſlighteſt perceivable Degree of Fever) That on the 9th he had two Puſtules in his Face, one of which he thinks contained Matter. That he had five ſmall ones round the Inciſion, and no others were diſcovered all over him. That he purged him the 15th, and ſuppoſed him ſecure from a ſubſequent Infection.

the very ſuſceptible, inflammable Subject he finally proved) he muſt have been one of thoſe very few Subjects extraordinarily conſtituted for a Reinfection. If he was not infected by Inoculation, and there had been no Defect in the Operation or Matter, it will argue, that the ſame Body may be ſo variouſly diſpoſed for this Diſeaſe at one Time, as to expell or eject it, even when brought into Contact with the Blood by Infuſion; and at another, to imbibe, or, as it were, violently to attract its *Effluvia* by common Infection. The Caſe however, at all Events, is pregnant with this practical Caution — That thoſe of the Inoculated, and thoſe only, who have had but a very light or doubtful Degree of the Small Pocks, ſhould rather decline viſiting the infected, eſpecially ſuch as labour under a Confluence, and, about or ſoon after their Suppuration and Scabbing; and by no means live at a higher Rate than uſual, nor expoſe themſelves to violent Heat or Exerciſe during the Contagion. Their Viſits even to the moſt favourably infected, if they will hazard them, ſhould be ſhort, cautiouſly timed, and ſeldom repeated. The Nurſe ſaid to have been mortally infected, at the third Time, (ſee P. 38, 39) had attended a Patient in a ſevere Degree for three Weeks, ſcarcely ever leaving his Room. Miſs TIMONI, * whoſe Diſeaſe from Inoculation was more certain and evident than Mr. *Mott*'s, ſlept with her inoculated Brother and Siſter throughout the whole Progreſs of their

* See P. 43.

their Small Pocks. I was informed in *Paris*, that a delicate handſome Youth at *Lyons*, in Order to preſerve his Beauty as well as his Life, was inoculated four Times without Effect; but that perſevering to a fifth, he received ſuch a confluent Diſeaſe, as effectually ſpoiled his Beauty, tho' it ſpared his Life. The firſt two * Caſes [Mr. *Mott*'s Infection by Art ſeeming not quite certain] would ſuggeſt to us, that poſſibly a long, and nearly continual Expoſure to the Scent and Vapour of the Small Pocks, may, in a very few particular Bodies, regenerate, as we may ſay, that native Fuel for them, which had been conſumed and expelled by a former Infection. The latter Inſtance at *Lyons*, if Fact (for not hearing it from an Eyè-Witneſs, and probably ſeveral Removes from one, I liſtened to it as a variolous, and problematical ſort of Rumour) would hint, that repeated Infuſions of the infecting Matter into the ſame Subject, may poſſibly be capable of generating that internal Principle of this Diſeaſe, which Nature herſelf had omitted at the Conception, and throughout the Formation, of the *Fœtus*. This would ſo abundantly realize the Axiom of *Habit's being ſecond Nature*, as to make the *ſecond* able in this Caſe to exceed the Intentions of the *firſt*; beſides an apparent Inference, that the Quantity and Duration of variolous Contagion may be important and eſſential. Nevertheleſs

* I have alſo heard that Lady *Morris*, who failed of Infection from the firſt Inoculation at *Bath*, died of a ſecond ſometime after; which I think has been ſaid to be the Caſe of Mr. *Scawen* ſeveral Years ago.

theleſs it was evident, that *Richard Evans*,* the Malefactor, who had the natural Small Pocks a Year before, and who was inoculated by three Inciſions repeatedly filled with freſh Drops of Matter on different Days (which ſeems to have been no unfair Tryal) was not re-infected by them. Suppoſing however, that inſtead of three Inciſions there had been thirty, and the Matter had been infuſed in a tenfold, or in any greater Quantity; Can any Phyſician, not having made ſuch an Experiment, poſitively foretell its certain Conſequence? I perceive my own Inability to do it, to my own Satisfaction; tho' I am apt to imagine, from the common Axiom of *Omne nimium malum* (beſides what I might infer from Miſs BAKER's Caſe, See P. 144) that ſome conſiderable Commotion muſt enſue from it, even in an exempted Conſtitution. Now a very long Inhalation of great Quantities of the variolous *Effluvia* may eaſily be conceived to act ſometimes in the like Manner: yet that it does not very often, if ever, do ſo to Effect, I am one Proof, among a few Millions more: ſo very generally and ſo ſtrongly tenacious is Nature of her ſettled Principles of Action. At the ſame Time we muſt obſerve, that by Re-infection here, we only intend that repeated internal variolous Infection, to which a human Body is ſuppoſed, by ſome Writers, to be *naturally* liable; and which may be conceived in Theory, by many who have never ſeen it in Fact; not that Repetition of it, which, we cannot cer-

* See P. 143

certainly aver, they may not be forced, or tortured into, by the Efforts and Aggravation of Art.

It being evidently proved then, that Inoculation produced the genuine Small Pocks: that, being ſo produced, they were attended with much leſs Peril, Difficulty and Loathſomeneſs than the natural: and that thoſe thus infected were juſt as ſecure as by the natural Diſeaſe, from all ſubſequent variolous Infection; it only remains to obſerve here, that the Opponents of Inoculation were better warranted in affirming, it did not *always* give the Small Pocks. This deſerves our conſiderate Retroſpection, in order to ſuggeſt, what Perſons ſo circumſtanced may reaſonably apprehend for themſelves. PYLARINI ſays, that ſuch of the Inoculated as had no Eruption, were infected promiſcuouſly with others, when the Diſtemper proved epidemic. Out of the 474 inoculated here by the End of 1723, twenty-nine were not infected. Dr. NETTLETON admits that two of his Patients miſſed, one of whom taking the natural Diſeaſe a Fortnight after, he imagines to have been inoculated with a ſtale inefficacious *Pus*, which had been taken when the Puſtules were withered and almoſt gone. In *Boſton* ſix miſſed. In *Carolina* I ſaw one white Perſon and three Slaves who did not take (one of whom I inoculated) and heard of another. One of the three has lived three Years ſince in *London*, never avoided the Contagion, and never took it. Miſs BRUCE of *Mark-lane* was inoculated by Mr. SAVAGE 1751. I viſited

her, the Inciſion inflamed conſiderably, but diſcharged little. She had a Fever the eighth Day, which continued 36 Hours, and ſweated profuſely; for having a very free tranſpirable Surface, every little Cold, and all her few Complaints, generally terminated that Way. She had, ſome little Time before ſickening, a ſmall Puſtule with Matter on her Tongue, and afterwards a very little one yellow-pointed, rather than headed, cloſe to one Extremity of her Mouth, which left an obſcure Pit. She had no other Eruption that could be conſidered as variolous, if this uncertain one might, but was purged repeatedly about the uſual Term of purging after the Diſeaſe. On the Termination of her Fever ſhe continued, thro' the whole Courſe of her Confinement, as lively as ever.

The Caſe of Maſter Hopkins (Son of Mr. Hopkins Druggiſt) whom I inoculated at about the Age of ſeven Years, with his two Siſters, *March*, 1759, is remarkable. His Inciſion was nearly dry on the Fifth from Inoculation, when, after a ſlight Belly-ach, he had a large natural Sweat, which made him quite eaſy. On the Sixth it was entirely dry, with a very obſcure whitiſh Line; and on the Eleventh, having continued all that Interval free from all Complaint, freſh Matter taken that very Morning was applied to the former Inciſion, which was ſcratched 'till a very little Blood appeared. That ſame Evening he complained as on the Fifth, but ſweated, ſlept well, and was perfectly at Eaſe

next

next Morning, without any Inflammation about the Orifice; and never had the leaſt ſubſequent Eruption nor Complaint, tho' he ſlept every Night with his Siſter, between three and four Years old, who had leſs than 40 Puſtules; and daily handled, played with, and drank after Miſs HOPKINS between five and ſix, who might have full 500, for about three or four Weeks, during which they all kept together in a large Nurſery. That Diverſity of Habits for this Diſeaſe, which ſometimes occurs in the neareſt Relations, is very remarkable in theſe Inſtances; where the eldeſt Child had not a ſingle Pock, nor ſcarcely any thing like variolous Sickening: the ſecond, for her Age and Size, and for Inoculation, had a great Number tho' diſtinct, with conſiderable Inflammation and Soreneſs: and the youngeſt had a moſt benign diſeaſe in every Reſpect, hardly ever lying down in the Day-time, nor ever complaining. The eldeſt had juſt Sickneſs enough to manifeſt the Admiſſion of the external Principle into the Blood, which afforded no Aliment, no aſſimilable Matter for it, but from which, nevertheleſs, Nature found it neceſſary to be expelled. I informed their Parents and Friends before Inoculation, that Miſs HOPKINS would have the moſt, and her Brother very few; but I had no *Criterion*, no Rule for diſcovering that he would not have one. They were all inoculated with the ſame Matter (excluſive of the ſecond applied to the young Gentleman) taken from a Subject I had inoculated;

and were prepared very nearly alike, with a proper Regard to their different Ages, &c. Mr. HOPKINS himſelf is conſiderably pitted with the natural Diſeaſe, which he had ſeverely in his Youth. Mrs. HOPKINS, who was inoculated after Marriage, had a conſiderable, tho' diſtinct, Eruption, and a Speck on one of her Eyes; which, however, has long ſince recovered all its natural Force and Luſtre; nor is there ſcarcely a diſcernable Trace of the Small Pocks in her Countenance.

Now ſome Perſons miſſing by Inoculation may be conſidered as exempted by the previous Diſeaſe, which two of the twenty-nine mentioned by Dr. JURIN are expreſsly ſaid to be, having been inoculated, as ſuch, for Experiment. It appeared afterwards that one of Dr. NETTLETON's two had had the Diſeaſe. BOYLSTON ſays it was affirmed of three out of his ſix, that they were remembered to have it very young; and a fourth recollected that, when ſhe was very young, the Doctor and Nurſe diſputed whether ſhe had the Small Pocks or not, having but three Puſtules, only one of which pitted. The Gentleman in *Carolina*, who was twice inoculated without Effect, was really ſuſpected by his Friends in *England* to have had it very gently in his Infancy in *Yorkſhire*; he has been twice ſince over in *England*, never avoiding, and never having taken the Small Pocks. The four Negroes were all born in *Africa*, and might not improbably have had it mildly in their Infancy. As they are liable

ble to a great Variety of cuticular Diſeaſes, a ſlight Pit or two was the leſs credited for a Mark of the Diſtemper. Dr. JURIN obſerved, that Inoculation miſſed oftner of its Effects on the more advanced than on young Children, it being more likely the former have already had it than the laſt. And we may add, that the Parents of adult Subjects, who might have ſeen them in a mild Small Pocks, or have over-looked the moſt gentle Degree of it, which has certainly happened, are generally dead when their advanced Poſterity are inoculated; whence any Information or Hint concerning a former Diſeaſe is often totally obſtructed.

Others may have remained uninfected from a natural and total Abſence of this ſpecific *Pabulum* or Quality in their Habit.* And undoubtedly each

* This turns on the much debated Queſtion, Whether any Perſons are naturally privileged from the Small Pocks? on which a Majority incline to think, that all Perſons arriving to a certain, tho' indefinite, Number of Years, take it, if often in the Way of it. There is no Doubt however, but ſeveral have attained to, and ſeveral have died at, an advanced Age in and about *London*, without taking it. I have ſeen ſome of them. In my former little *Eſſay on Inoculation*, I hazarded a Suppoſition, without any Authority, that two Perſons out of every Hundred might be thus naturally exempted. I find however, that REIDLIN, who contends for this Exemption, thinks two out of each hundred rather too large a Calculation — *Sur cent perſonnes à peine deux evitent cette maladie.* Were we to be determined on this Point, by the 45 who remained uninfected out of the 1179 inoculated, (ſee P. 128) it would be nearly 4 in each 100: but if we add to theſe Inoculated 900 more in *South Carolina*, A. D. 1738; and add 5 out of them who did not take Infection, to the former 45, it will reduce the Proportion of Bodies naturally exempted (ſuppoſing not one of the 50 ever to have had any Degree of the natural Diſeaſe) to a ſmall Fraction above 2 $\frac{1}{2}$ in each Hundred.

each Conſtitution is exempted from ſome particular Diſeaſes, and more expoſed to others. In ſome an Exemption may be only temporary, and depend on any preſent or previous relaxing and evacuating Diſeaſe, as chronical Intermittents, Hæmorrhages, Diarrhæas, or an accidental overmoiſt and leucophlegmatic *Craſis*; whence the Powder, as we may metaphorically term the Fuel here, being damped, the variolous Spark is for that Seaſon extinguiſhed. Others may have but a very ſmall Proportion of the Fuel, and ſo very free a Surface, that upon the moſt favourable Mode of Contagion, a copious *Diaphoreſis* may expell, through the exhaling Veſſels, the *Effluvia* which were admitted by the inhaling ones, or by an Inciſion: for ſuppoſing them to encounter nothing aſſimilable in the Blood, * they muſt nevertheleſs be expelled, as heterogeneous to it. And this, with very great Probability, was Miſs BRUCE's Caſe, where the *Craſſamentum* was ſcarcely affected enough to furniſh one viſible Efflorescence, and the variolous Cauſe was emitted with the tranſudatory Lymph.

We may juſtly conclude however from certain Experience, that wherever Inoculation miſſed, from whatever Cauſe, the Operation was introductive of no other ill Conſequence: though with Regard to their future Exemption, it muſt depend on the particular Cauſe of their late one. Thus if that were owing either to a natural and total Abſence of the variolous *Pabulum*, or to a very

* See Miſs *Baker*'s Caſe P. 144, and Maſter *Hopkin*'s P. 154, 155.

very gentle Degree of the genuine Small Pocks inſenſibly paſt through before, there can be little Doubt of their perpetual Indemnity. But where the Operation has been ineffectual, from the late dormant and unſuſceptible State of the Fuel, whenever thoſe Cauſes depreſſing or damping it are removed, the Subjects are doubtleſs liable to the Diſeaſe. We are to ſuppoſe though in ſuch Caſes, that a Doſe of active variolous Matter has been applied and received. And if the Inciſion has inflamed, though but moderately; if there has been a Fever; and a ſmall Number of Puſtules, which ſuppurate and obſerve the *Stadia* of the gentleſt Diſeaſe, appear, I ſhall not doubt myſelf of the Patients future Security. It has been certainly known that one only has riſen, and the Patient, reſiding for Years afterwards in the Scene of Infection, has not been viſited with it.

The accurate Dr. JURIN conſiders 5 out of 474, as having had an imperfect Small Pocks. This gives us an Idea of ſome Eruption, which did not exactly fill, maturate, or obſerve the uſual Stages of the regular Diſeaſe. BOYLSTON does not ſet down one Patient of near 300 under this Predicament; but his inferior Accuracy and greater Temerity on this Subject are very obvious. It were to be wiſhed we had been informed of any remarkable Sequel to this imperfect Small Pocks; though if they had taken the Diſeaſe afterwards, it is probable we muſt have heard it, from one Party at leaſt.

SEC-

SECTION VI.

Whether there be a material Difference in the variolous Matter, taken from different Degrees of the Diſeaſe? Between that taken from the natural, and from the artificial? And whether either be communicative of any other Diſtemper or Ailment?

THESE Doubts and Objections, but more particularly the laſt, having contracted the early Progreſs of Inoculation among us; notwithſtanding their Operation at preſent is much abated: yet in order to reſtrain it always within its juſteſt Bounds, and to avail our Neighbours (who may hereafter admit Inoculation, and have theſe ſame Objections to it repeated) of our Experience concerning them, we ſhall attempt to diſcuſs them diſtinctly in this Section.

It appears the *Grecian* Operatrix was very careful in her Choice of the Ferment, as PYLARINI terms it, extracting the Matter from the ripe and kindly Puſtules of a young Child, otherwiſe of a ſound Conſtitution. He ſays, ſhe rejected

jected the *Pus* from the Inoculated as ineffectual. TIMONI alſo ſays, they pitch upon ſome young, ſound and healthy Subject, ſeized with the natural Small Pocks, and of the diſtinct Kind, to take the Matter from. He adds, it was taken the 12th or 13th Day from Seizure, and Experience ſhews it may be properly taken as ſoon as the Matter is well concocted, ſmooth and equal; and that it will be effectual as long as it can be fairly extracted from the Puſtules, which, in ſome Inſtances it may be a Week, and in others I have ſeen it a full Fortnight, after the firſt evident Suppuration. Some Gentlemen who imagine the variolous Matter may impart a gentler, tho' effectual Diſeaſe, by its being kept, from an Exhalation of its moſt ſubtil and volatile Parts, will doubtleſs prefer its being taken from ſome of the Puſtules that are likely to dry laſt, which are generally on the Extremities, and opened or penetrated with the leaſt Inconvenience to the Infected; being repleniſhed too from the later and more dilute Runnings of the variolous Diſtillation, as we have ventured to term the Eruption and filling of the Puſtules. And beſides what has been formerly * hinted on ſuch a Circumſtance, it is evident in Fact, that the peculiar Virulence of ſome Poiſons may eſſentially conſiſt in their moſt volatile Parts; from the violent Effects of certain chemical Fumes, which leave the remaining Maſs ſafe and medicinal. I have been certainly informed, that a Relation of my own dropped

* See P. 74.

down inſtantly dead, on pouring out a large Quantity of ſome diſtilled Spirits from one Veſſel into others. And that the Vehicles of ſome Poiſons may become leſs noxious and acrid, from an Exhalation of their moſt volatile Particles is evident, from the Juice of the *Caſſada* Root, which containing certain Death on its firſt Expreſſion, becomes innocent and inſipid in a very few Days; the dry Root, after Expreſſion, making a wholeſome, and not unpalatable, Bread. Be theſe Facts however more or leſs applicable to the different Situation and Age of the variolous Puſtules, Reaſon and Experience concur to make us prefer a bright well concocted Matter, which will not be too mature, as long as it is imputrid and efficacious.

On the other Hand Mr. (now Dr.) FREWIN in *Suſſex*, who was pretty active and enterprizing in this Practice, tells us, he took and applied ſome of the Liquid in the Eruptions, while yet in its limpid State; and could perceive no other Difference, than its being ſomewhat ſlower in its Operation. This Gentleman has not informed us, whether the ſame Curioſity prompted him to take this unripe Liquid from the firſt Eruptions that afforded it, which would probably be thoſe of the Face and Neck, and which we muſt have diſapproved for Reaſons juſt given. Beſides which, I ſhould have doubted, before his Experiment, of the Efficacy of the unripe Lymph of the later and lower Eruptions; which are not likely to be ſo fully impregnated with the infecting Particles,

as

as the enlarged and concocted Puſtules, and ſeem to have ſome Analogy with Grain, in its immature State. Poſſibly too the Smoothneſs of the ripe Matter, which partly conſiſts of the late red Globules, may render it more equally miſcible with the Blood of the Perſon to be infected, than the lymphatic Part would be: And notwithſtanding this may be only Suppoſition; yet as the ripe yellow Matter has been found ſo very generally effectual and ſafe, we can diſcern no Reaſon for trying the more thin and ſerous Vehicle; except where the former is not to be procured, which ſometimes happens, as the Puſtules in ſome Caſes and Habits will wither and ſcab without a good Suppuration

Pylarini, like a Phyſician, at once inferred the Efficacy of the *Pus* from Inoculation, which the *Greeks* rejected. It was natural enough for him to ſuppoſe, in the Infancy of this Practice, that it would be milder than the natural, as being the Produce of a milder Diſeaſe: but this he modeſtly ſubmitted to further Experience, which, I imagine, will rather induce us to conclude, that what he was for attributing to the Matter from the Inoculated, depended much more on its Application by Inciſion. We have at preſent not the leaſt Doubt of the Efficacy of the Matter from Inoculation. Mr. Ranby's Papers inform me he has found it effectual in the 5th Remove from the natural *Pus*, which I have alſo experienced myſelf; and a Gentleman abroad aſſured me it had the ſame Energy in the 7th or 8th Succeſſion,

ceſſion, which we may ſecurely extend to the eight hundredth.

It ſeemed uncertain as yet whether the purulent Diſcharge from the Inciſions was variolous. Dr. Nettleton informed Dr. Jurin in 1723, that the Matter infuſed into a Lad unaffected by it was chiefly taken from the Inciſion, the Puſtules being withered and almoſt gone; whence he inferred the Matter from the Inciſions would not infect. Frewin, who publiſhed in 1749, ſays, that, for want of Matter from the Puſtules, he often applied the purulent Diſcharge by the Inciſions in the Height of the Diſeaſe, which has ſucceeded well: but that trying the ſame 10 or 12 Days after the Turn of the Pock, it failed. It would have been material if he had diſtinguiſhed here, whether or no there was any Puſtule within the Lips, or cloſe on the Verge, of the Orifice, which ſometimes happens. As many of the Inoculated have very few Puſtules, and they are ſometimes diſpoſed to ſcab and wither away with very little Suppuration, it might be of Service to diſcover that the Matter from the Inciſions would infect: but it would be certainly ſatisfactory to find it would, where there was no Eruption from Inoculation, as its Varioloſity would greatly warrant the future Security of the Perſon it was taken from. That it is variolous is ſince evinced. Mr. Wall, Surgeon of the inoculating Hoſpital, aſſured me, he infected a Child of ſeven Years old, with a conſiderable Eruption of the diſtinct Small Pocks, from the ſuppurated Inciſions of a

Lady

Lady of Condition, who had not a ſingle Puſtule, tho' a Head-ach and ſlight Fever at the uſual Time of ſickening.*

But as the Friends of Inoculation vaunted, in the earlieſt Conteſts about it, that they could ſelect a benign Matter from a mild Diſeaſe and a ſound Conſtitution, for the Infuſion of the Small Pocks, which were not always the Circumſtances of natural Infection: while its Opponents declaimed on the great Danger of inoculating, with the Small Pocks, any hereditary or contracted Diſeaſes of the Perſon it was taken from; the Certainty, or, if that ſhould be unattainable, the Probability or Improbability of the Aſſertions on each Side deſerves our Conſideration.

My having a large Family obnoxious to this Infection in 1738 rendered me more than ordinarily attentive to every Mode and Circumſtance of it. Wherefore, after that a mature Conſideration of the Diſeaſe, of the written Facts and Arguments for and againſt Inoculation, and a conſiderable Meaſure of ocular Evidence on this Occaſion, had irreſiſtably determined me to prefer the Operation, I could not but approve the Conduct of the firſt Operators, in ſelecting, with all due Caution, the beſt conditioned Matter from the moſt benign Diſeaſe, and healthieſt Subjects to inoculate from; as well as the Expediency of taking it at an Age, when ſuch Subjects could not be ſuppoſed to have contracted any Diſorder from their own Irregularity. I conſidered, and

ſtill

* See P. 142.

ſtill conſider it, in the important Function of infuſing a Diſeaſe, as the Duty of the Infuſer, to avail his Patient of every poſſibly availing Circumſtance; that, in Caſe of a Miſcarriage, which repeated Experience has manifeſted the Contingency of, he may have nothing, but the Want of a ſupernatural Penetration, to reproach himſelf with. And this I hope is, I am very certain ought to be, the general Conduct of as many, of every medical Arrangement and Denomination, as are engaged in giving the Diſeaſe. But the preſent Queſtion is, Whether this be eſſentially important and neceſſary in itſelf, or only very preferable, from great Prudence and abundant Caution. When I had repeatedly ſeen the Matter taken from one Patient under a very ſmall Eruption, on its Application to half a Dozen, produce a different Quantity of Eruption, ſometimes very different, in each; and the *Pus* from another under a conſiderably more copious, tho' diſtinct, Eruption, convey no more, and ſometimes leſs, than the former; and generally found the Height or Remiſſneſs of the Symptoms to correſpond with the viſible Quantity of Puſtules, it was impoſſible to avoid inferring, that ſuch Variations reſulted from the different Conſtitutions of the Inoculated. Hence, in the little Eſſay publiſhed about fourteen Years paſt, I ventured to aſſert, that tho' ſomething might *perhaps* depend on the Quality of the infuſed Matter, (whence every Operator muſt endeavour to procure the moſt unexceptionable) there was *cer-*

tainly

tainly much more in the Diſpoſition of the Body into which, and the Seaſon of the Year when, it was infuſed. In the former Part of my Opinion I have had the Pleaſure to be ſince confirmed by the Suffrage of Dr. MEAD, to whom I preſented that Eſſay, and who thinks (a) the Condition of the receiving Body a more important Circumſtance than that of the imparting one. But beſides this moſt rational Inference, there are not a few Facts that directly confirm it. The firſt Inoculator I ever knew, a Perſon of great Veracity, aſſured me privately, he had inoculated with *Pus* from a Patient loaded with a natural Confluence, of which he afterwards died; and that thoſe inoculated with it did entirely well, without any very ſevere or unuſual Symptoms. The adventurous Dr. FREWIN ſays, he has known 21 Perſons inoculated the ſame Day, from a confluent Pock, which finally killed the Patient; yet all thoſe, he affirms, had it in as favourable a Way as could be wiſhed. He adds, he has inoculated many more with Matter of the malignant kind, without the leaſt ill Conſequence. Now, tho' I am not without ſome Acknowlegement for ſuch an Illumination on this curious Topic, as I do not chuſe to queſtion the Author's Veracity; yet I muſt confeſs the Idea of it gives me a Horror, which is not very philoſophical perhaps; but is ſuch, as would prevent me from troubling

(a) Praeterea plus mea opinione refert, in quale corpus infundatur, quam de quali eximatur peſtilentiae virus.

De Variol. P. 84.

troubling him to ſelect Pock for a Friend or a Patient of mine. I ſhould have wanted an eighth Convict for the Experiment. The ſole Uſe I would make of theſe Inſtances is this; that ſuppoſing, only for Argument's ſake, ſuch a confluent and malignant Small Pocks to reign ſo generally, that no better Matter could be procured, I ſhould prefer inoculating even from them to their natural Infection. I muſt ſuppoſe however, that it is not taken from a Diſeaſe attended with a Gangrene, which we have cautioned the Subjects of the Small Pocks to avoid the* Stench of. But in other Reſpects enough has been inſtanced and implied, to make the Friends of Inoculation admit, that the Opportunity of ſelecting Matter, from a particular Sort or Degree of the Diſeaſe, is far from being its moſt material Advantage. And this Concluſion will be ſtrengthened not a little, by our obſerving, that Dr. HAEN the moſt flaming Oppoſer of Inoculation, has not in his laſt vehement Work againſt it, formed one of his Objections to it, on any ſuppoſed Difference in the Matter, that imparts the Diſeaſe.

We proceed to conſider, whether the infectious Matter is communicative of any other Diſeaſe, or morbid Diſpoſition, the Perſon it was extracted from might have, or be liable to; which was ſtrongly affirmed and induſtriouſly propagated, by the natural Fears of ſome, and the Perverſity of others. For my own Part I can with great Truth aver, that an Experience of more than 20 Years

* See P. 11, 12.

Years on this Subject, and the utmoſt Reflection in my Power, have convinced me, that it never did, nor can impart any Diſeaſe, but the ſpecific one that produced it; and this, among other Reaſons, for the ſubſequent ones, which I have partly tranſcribed from my former Eſſay on this Method.

The Seeds or Principles of contagious Diſeaſes I conceive, however impalpable, to be as diſtinct as the Seeds of Plants, which may be lodged in ſuch different Soils and Climates, as will either diſpoſe them to Luxuriance, or prevent their very Germination; tho' we cannot, by any Art or Compoſt, make a Pippin produce a Cabbage. The Matter of the Pock, however produced, we find ſufficient, in the ſmalleſt Quantity, to convey the ſame Diſeaſe that effected it: and if it were to convey any other, that other ought, at the very Time, to have been united with what it does convey: for to be transfuſed it muſt exiſt, which the transfuſed Diſeaſe does. But I may be anſwered, that it is not ſuppoſed the Pock ſhall, with itſelf, convey the Plague, Meaſles, or any ſuch acute contagious Diſeaſe, which has a diſtinct external Cauſe; but ſome hereditary or contracted Diſorder of the Perſon it was taken from: which would imply, in ſhort, that we muſt transfuſe his *Stamina*, his Conſtitution, in a minute Part of a Grain of his variolated and ſuppurated Blood; which is not only ſtrongly improbable to a Perſon of the leaſt medical Reflection, but would prove much more than the Ob-

jectors could intend; ſince ſuch a Comminutation might ſometimes prove for the better.

Hereditary Diſeaſes I apprehend, do not only imply that they may be imparted, but the Expreſſion aſcertains the ſole Manner in which they are, by Conſanguinity or Propagation, ſtrictly: ſince the ſame Cauſe, which often effects ſuch ſtriking Reſemblances in the Features, Make, Complexion, Appetite, and the very Temper, may produce a ſimilar Conformation of the vital elaborating Organs, (which muſt produce a ſimilar *Craſis* or Conſiſtence of the Blood) and in the vaſcular and nervous Syſtem too; the natural Conſequence of which will prove a Propenſity to the Diſeaſes of the Parent. If they have been the unwelcome Legacy of the Father, we may conſider them as the Conſequences of an extraordinary Infuſion indeed, but of a particular Fluid ſecreted from the vital Maſs, and probably affected with its particular Qualities, but viſibly homogeneous as ſuch, nor ſo ſenſibly perverted in its Texture and Subſtance, as Blood variolated into *Pus*; in which Caſe it could ſcarcely fulfill the Purpoſes of Fecundity or Vivification. And if we ſuppoſe the Diſeaſe, which is to be co-infuſed with the Pock, to deſcend from the Mother, we are to conſider the Perſon hereditarily affected, as one partly generated from her Subſtance, and ſolely nouriſhed by her Humours for many Months; a Situation, which may well be inferred to impreſs ſuch a Diſpoſition to the Diſorders her Humours are propenſe to, as can ſcarcely be

received

received afterwards from another Perſon. And ſuppoſing this co-infuſible Diſeaſe contracted by the Perſon to be infuſed from, the Argument is ſimilarly applicable. For the *Pus* can no longer be conſidered here as meer Blood, in which a Diſpoſition to other Diſtempers might poſſibly reſide; but as a peculiar Corruption of it by the variolous Cauſe, in the Proceſs of the Diſeaſe; which, if it aſſimilates ſuch diſpoſing Particles, muſt ſubdue them to its own Nature, as it inconteſtibly does, and in ſome Proportion to the evident Alteration of their Vehicle: from which Change of Conſiſtence, Figure and Texture, their former Effect muſt ceaſe; if it be as true as probable, that Bodies operate mechanically, and in Conſequence of them. I judge it unneceſſary to ſay any thing of ſuch Diſeaſes as are juſtly termed *Errores loci*, or the Effects of a bad Formation of any Part; ſince it may be as reaſonable to ſuppoſe the Infuſion of a Hump-back or Diſlocation, as of them. And yet ſuch is the Rage or Whim of Oppoſition, that after the fantaſtical Objections Civility has ſometimes obliged me to liſten to, I ſhould not have been extremely aſtoniſhed, if ſome had been delicate enough to dread being inoculated from a different Sex, from apprehending a Commutation of their own, or the compounding an Hermaphrodite. Such a Reflection may be judged full ludicrous here, but it is difficult to argue with a continual Gravity againſt ſome *Chimeras*.

But whatever Validity or Weakneſs there may be in theſe Reaſons for our negative Solution of this Query, there are very numerous Facts to prove, that no other Indiſpoſition is ingrafted with the Small Pocks, from the tranſmitting Body: tho' in Juſtice the Aſſerters ſhould eſtabliſh their Affirmative on Facts (which they may ſafely be challenged to do) rather than leave their Antagoniſts to prove the Negative. This happens nevertheleſs to be no Difficulty; and if the confluent and malignant Small Pocks have been proved, in many Inſtances, incapable of generating their own Degree and Mode of this Diſeaſe, it is ſcarcely conceivable they ſhould tranſmit another eſſentially different. Let the following Fact ſuffice here, inſtead of ſome thouſands which might truly be produced.

The venereal Diſeaſe, known to be as communicable as any, has been particularly dreaded in this Reſpect: ſince doubtleſs its deeper Taints are eradicable in ſome Conſtitutions, but with great Difficulty; and in a few perhaps never entirely. Now a worthy Surgeon of my Acquaintance, of great Truth and Morality, aſſures me, of his own Knowlege, that a young Lady of a creditable Family was inoculated by an Apothecary, from a Gentleman's Servant in a kindly Small Pocks, who had, at the ſame Time, a venereal *Bubo* and other Symptoms, of which the Apothecary was wholly unconſcious. The inoculated Lady notwithſtanding did mighty well, and to the End of many Years, which have

have ſince intervened, had not the lighteſt Symptom of venereal Contagion. Yet perhaps from the ſubſequent Scabs, Baldneſs and cuticular Effects of both Diſeaſes, which will admit of a moderate medical Parody, it is an obvious Concluſion, that no other would be more likely to be infuſed with the variolous Matter. Finally, the acute Dr. HAEN never ſuppoſes the Communication of any other Diſeaſe but the Small Pocks by Inoculation; tho' he judges, and not improbably, that the Inoculated may be affected by any febrile epidemic Conſtitution of the Air, in the ſame Manner with thoſe naturally infected at the ſame Time and Place.

In the Heat of theſe medical Diſputes, the ill Effects, which put an End to the Transfuſion of the Blood, were alſo preſt into the Service againſt Inoculation; but ſurely without ſufficient Reaſon or Candour: Since in the former a large Quantity of Blood is ſuddenly admitted to replace as much of the Patient's own; the former of which, however ſeemingly better qualified in itſelf; yet, *quoad hunc*, with Reſpect to the Receiver, not having been factured and elaborated by his individual Organs, may have a *Craſis* not properly counteractive to the Tone of his Solids; unfit to correſpond with the Orifices of his Strainers: and, as the Blood was ſometimes received from young eatable Animals, it might not afford the preciſe Quantity or Quality of the nervous Secretion, neceſſary to the regular Information and Oeconomy of the human Machine, whence

whence very ſurprizing Conſequences might ariſe. But here the great Diſproportion and Diverſity of the Fluid transfuſed, and that infuſed, are too manifeſt to make us expect any coincident Conſequence. Inoculation had alſo been repreſented by ſome as analogous to admitting the *Saliva*, or Slaver, of a mad Dog into the Habit; as if the Reſemblance of a Bite injected, and an Inciſion infuſed, with a very different Liquid, were to obliterate the monſtrous Diſparity of their general Operation and final Event: when, if it had been rightly conſidered, that the morbid canine *Saliva* ever produces one and the ſame ſpecific and ſurprizingly reſembling Diſeaſe, even in the human Conſtitution, which is not its original Subject, it muſt rather have precluded all Suppoſition, that the Inſertion of the Small Pocks ever communicated any Diſeaſe eſſentially diſtinct from itſelf.

On the other Hand Abſceſſes in the *Axilla*, or Armpit, tho' infrequent, happen oftner to the Inoculated, than after the natural Diſeaſe; and are probably owing to the Tendency of Humours to the Ulcers; which Ulcers have continued to diſcharge ſometimes for ſeveral Weeks, and proved ill conditioned and troubleſome, in a few Inſtances. Neither are we without ſome rare Examples, where the Sight and Beauty of an Eye has ſuffered from the artificial Diſeaſe. I knew two Ladies abroad, thus affected, where the youngeſt greatly outgrew the Weakneſs and Blemiſh. The like occurred here above ſix Years ſince, which is now entirely vaniſhed. A white

white Speck remained over the *Iris* of a Youth of 11 Years old, whom I inoculated, for ſome Months after the Diſeaſe, which was very moderate in every other Reſpect: but it is now entirely waſted, and has neither leſſened his Sight, nor weakened the Organ. But ſuch inconteſtibly happen much ſeldomer to the Inoculated than to others: and if we admit that the *Ratio* of ſuch an affecting Diſorder in both Ways may correſpond to that of their different Mortality, we certainly admit the utmoſt that can be true againſt Inoculation on * this Head. I inoculated a young Lady of a fine Complexion for this Diſeaſe, who being tired of a little Confinement under a very light Infection, after looking out of an airy

* That I have not exceeded in this Computation is more than probable; ſince Dr. ARCHER Phyſician of the Inoculation Hoſpital, after a very happy Experience of twelve Years, aſſures me, that of 2499 Patients inoculated there, to the 24th of March, 1761 (of whom only eight died) not one loſt the Sight of an Eye; and there were but a few who had any Weakneſs of Sight, and that of no Continuance. He acknowleges at the ſame Time, that of the firſt 1500 Patients received there in the natural Way (of which many muſt have died) none [ſurviving] ſuffered in their Sight: but then he adds, that laſt Year in the natural Way he found bad Eyes conſiderably more frequent than uſual —— Here, by the Way, for the Information of ſuch as have not had the Pleaſure of peruſing Dr. SQUIRE's (now BISHOP of St. *David*'s) excellent Sermon, in Regard to Inoculation in 1760, nor the State of the Hoſpital to *March* 24, 1761, we ſhall obſerve, that out of the Number of 5950 in the natural Diſeaſe, admitted from September 26, 1746, to March 24, 1761, there have been cured 3776; from whence it will appear, that the Number of the deceaſed is 1274, which is one full fourth, and 12 over, of thoſe naturally infected: while the Loſs by Inoculation was, at the neareſt, without a Fraction, one in 312 of the Inoculated, a moſt ſaving Loſs indiſputably! which indeed would have been more properly remarked in the preceding Section.

airy Window, complained ſuddenly of a Pain in the *Axilla* of the inoculated ſide, which inflamed, and, forming a large Abſceſs, proved of a ſtrumous Diſpoſition; tho', on a Change of Air, and more compleat Puberty, ſhe grew entirely well. She was often ſubject before to little Eruptions about the parotid Glands, and the Perſon the Pock was taken from of a remarkably pure Surface: whence it ſhould ſeem here, as if either the Diſeaſe, or the ſudden Check of Perſpiration after it, excited the inherent ſtrumous Diſpoſition, which indeed was but moderate, as She continues entirely healthy ſince. And here I preſume on the Readers Indulgence, for preſenting him a ſingular Conſequence occurring to a Patient I inoculated in 1759.

A very young Lady between ſix and ſeven Years of Age, being inoculated with her two Brothers and two Siſters, had a conſiderable Crop of the diſtinct Small Pocks, with ſuch a Tumour of the Face and Eyelids, that She continued blind about four Days. The Diſtemper, nevertheleſs, was very benign and regular, with a perfect and plentiful Suppuration; and was attended with very little, if any, ſecondary Fever. But on her getting up and taking Phyſic, while the Pocks were ſcaling from her Face, a little *Phlegmon*, or large Stye, aroſe on the left Eyelid, and was accompanied with a *Strabiſmus*, or Squinting, the Pupil being directed to the inner *Canthus*, or great Angle of the Noſe. As the Stye was pretty hard, and ſettled on that Part of the Lid near the

the outward *Canthus*, I imagined at firſt its Preſſure on the Ball of the Eye gave it that oblique Direction, and hoped, when that little Tumour was diſperſed, the Eye would recover its natural one. But after it waſted by Degrees, the Squinting ſtill continued. I recommended then the Advice given by St. Ives, *viz.* — That the young Lady ſhould place herſelf before a Looking Glaſs every Morning, and look at the Reflections of her Eyes in the Glaſs, 'till ſhe found the Pupils there direct and ſtrait, and to practice this at leaſt a Quarter of an Hour at a Time. This ſhe did, and within a few Days the Squinting entirely diſappeared, which greatly ſatisfied her Parents, and made me greatly pleaſed with St. Ives. She was adviſed alſo not to read, nor ſew, and to face whatever Window ſhe was near, rather than to have it on either Side of her. She had not all this Time the leaſt nervous, nor indeed any, Complaint. Nevertheleſs, within a very few Days the Obliquity returned; and from that Return to the Time She left *England* about *Auguſt*, 1760, being above a Year after her Inoculation, the Squinting became periodical, her Eyes looking perfectly direct with their natural Motion, and no other, one Day, and the next with this ſtrong Obliquity. The Apothecary who ſent in the Medicines I had directed before, and during the Diſeaſe, with the uſual Purgatives after, gave her, on his own Judgment, Bark, and Valerian, and perhaps other nervous Medicines, for a conſiderable Time on

this Account, without any Alteration for the better or worſe. A little before her Departure, I adviſed the affected Eye to be defended ſtrictly from all Light for a full Week, and then taking off the Cloths, ſhe looked quite ſtrait and right, though it was in Courſe to have been her bad Day. Yet either the next Day, or the Day but one after, the *Strabiſmus* returned every other Day, but had now exactly ſhifted its Intermiſſions, in which State ſhe left *England*. I gave her Father, a very ſenſible worthy Gentleman appointed to a Government abroad, ſome Directions, and ordered a few Medicines with her, but have not as yet heard whether they have been attended with any Benefit, or with any further Change of her Paroxyſms. But as She is very young and healthy, tho' of a ſlender Make, perhaps her accruing Strength, and increaſing Attention to the great Article of Beauty, may concur to rectify this ſtrangely intermitting Appearance; which I have not found paralleled in *Zacutus* his *Praxis admirabilis*, nor in any medical or philoſophical *Ephemerides*. She had a Fit on the 9th from Inoculation, previous to Eruption, being the only one of eight Brothers and Siſters inoculated, who had one. But the Look of her Eyes was not at all diſtorted by this, which was very evident, her Blindneſs not approaching for ſeveral Days after. She had not after this Fit, the leaſt Head-ach, *Delirium* or nervous Complaint, throughout, nor ſubſequent to, the Diſeaſe. I ſhould not omit, that the only Window

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in the Chamber where ſhe lay was ſituated on her right Side, in a Corner below the Foot of the Bed, and at ſome Diſtance from it; ſo that, upon opening her Eyes, after her Blindneſs, ſhe could not look directly at it; and as her Eyes may then be ſuppoſed a little weak, poſſibly this oblique Situation of the only Window might have a Tendency to produce this odd Diſorder. I mention this Circumſtance as a Caution to others, in a like Situation, having related the Caſe without the leaſt Diſguiſe or Suppreſſion. One of her Brothers, inoculated at the ſame Time, had about an equal Quantity of Puſtules, either of them having had abundantly more than the other ſix altogether. Theſe two were inoculated from the ſame Matter with, and had by no Means a larger Doſe than, the reſt. He was blind about the ſame Time with her, but never ſquinted. He could not ſee any Window, and the Light that came from his Siſter's Chamber, when her Door and Window-ſhutter were opened, came pretty directly to him. The Eye firſt affected was the fartheſt from the Window, and of the ſame Side with the inoculated Arm.

I ſhall conclude this Section with declaring, that although I have tantamount to a Conviction myſelf, that the variolous Matter will convey no Diſeaſe but the Small Pocks; and that a well concocted *Pus* from any Mode of it, not accompanied with a Mortification of the Fluids or Solids, will operate but in Proportion to the Quantity and Quality of its Fuel in the Perſon receiving it;

yet I am entirely of Opinion, that the moſt laudable kind of Pock, and the moſt unexceptionable Habit of Body, ſhould be always carefully ſelected to tranſmit the Diſeaſe; as well from Motives of Prudence, as from a Reflection on the Shallowneſs of all human Science, and the Poſſibility of ſuch Conſequences as have not hitherto ſupervened. We muſt be very certain, the beſt Diſeaſe from the beſt Habit will not be moſt likely to convey the worſt; and there may be an ill-judged, perhaps an ill-natured, Temerity in our extreme Oppoſition to ſuch of theſe popular Prejudices or Miſtakes, as are founded in natural Love for ourſelves, or on a relative, or ſocial Affection, for others.

SECTION VII.

Of the various Methods of artificial Infection.

THE great comparative Security and many Advantages of Inoculation being, to our Apprehenſion, indiſputably eſtabliſhed from the preceding impartial Detail of its Conſequences, we proceed to a Deſcription of the different Methods of this ſimple and eaſy Operation.

PYLARINI informs us, the *Greek* Inoculatrix made an oblique Puncture with a Needle on the Middle and Top of the Forehead, on each Cheek, and the Chin; on each *Metacarpus* and *Metatarſus*, and dropt into each a little of the *Pus*, which ſhe had juſt brought warm in her Servant's Boſom, from a young variolous Patient, ſick in the natural Way, and of a good Sort. TIMONI ſays, the Operator is to make ſeveral little Wounds with a Needle, in one, two, or more Places of the Skin, 'till ſome Drops of Blood enſue, when he is to pour a Drop of *Pus*, qualified as above, into each, and mix it well with the Blood, as it iſſues out. Both theſe Phyſicians are here relating the *Greek* Method, the latter recommending, from himſelf, the Muſcles of the *Radius* or Arm; and the former judging

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it eligible to make the Punctures in the more fleshy Parts of the Body, as being less liable to Pain and Inflammation, and not interwoven with Tendons. The Wounds were covered with Bandages gently applied, and sometimes half a Walnut Shell was placed concavely over each Orifice; and it was recommended to the Patient to forbear scratching or exposing them to the Wet.

I have read some Author who says, the Wounds in the Face, Chin and Cheeks, were made in Resemblance of the Cross; and that their Number of five referred to the five Wounds of CHRIST. Now, tho' undoubtedly many of these are superfluous, and all very injudiciously placed, it demonstrates these innocent well meaning Creatures never deemed the Practice an Invasion of the divine Prerogative, but very naturally ascribed the good Effects of it to the Father of Mercies; when they enterprized it, as I may say, under the Auspices of those religious Symbols; and, seeing none but a happy Issue attend it, never supposed the least physical Reason for the Method: as PYLARINI assures us, the Woman, who gave him a full and plain Account of the whole Process, was entirely ignorant of the true Cause of the Propagation of the Small Pocks by Incision. It required an Imagination of more Flame, joined to an odd Perversity of Erudition, to discover, as the Rev. Mr. MASSEY did, that the Devil invented Inoculation, and poor *Job* was his first Patient: tho' perhaps our Phrase of the

Devil's

Devil's being in the Doctor was previous to this amazing Diſcovery.

Mr. MAITLAND generally made an Inciſion in each Arm, but inoculated the ſix Malefactors in *Newgate* in both Arms and one Leg. It was uſual with ſome for a conſiderable Time, to inoculate one Arm and the Leg on the oppoſite Side. It is ſaid the Ambaſſador from *Tripoli* here affirmed, that in *Africa* the Diſeaſe was imparted by paſſing a Needle and Thread, that had been conducted thro' a well maturated Puſtule, through the Teguments between the Thumb and Foreſinger, where they may be pierced without wounding the ſubjacent Muſcle. We are to ſuppoſe part of the infected String was ſecured for ſome Time in the Puncture.

The *Chineſe* are ſaid to have had their peculiar Method of conveying the Small Pocks for a long Time paſt, which cannot properly be named after that Operation in Gardening, ours ſo greatly reſembles. They convey a Pellet of variolated Cotton, with the Addition of a little Muſk, into the Noſtrils of the Perſon to be infected, and find it effectual to give the Diſeaſe. We have obſerved, that the Miſſionaries ſufficiently extol the Abilities of their Phyſicians: but certainly no very ſagacious one could deviſe or encourage this Practice; which ſeems to have no ſort of Advantage of the common Infection it ſo greatly reſembles, except that of its admitting them to premiſe a proper *Regimen* and Preparation, and to ſelect a proper Time of Life, and Seaſon of the Year,

Year, for the Diſeaſe. We ſhall not ſtop here to theorize on the manifeſt Diſadvantages of variolous Inodoration, as this Method may be termed, in Reſpect of Inciſion (ſince it is not clear that a variolated Pill might not be ſwallowed as eligibly) but exemplify the Effect of it from an Experiment, which Dr. MEAD was allowed to make on one of the ſeven Malefactors who were to be infected by Art. This female Criminal, the youngeſt of them all, was about eighteen Years old; ſhe ſickened and recovered as the others did: but he informs us, the Symptoms were much ſeverer; that immediately from the Introduction of the Matter ſhe was afflicted with a moſt excruciating Head-ach, and with a Fever that never intermitted 'till Eruption came on.

Dr. WILLIAMS informs us of another Method of Infection, practiſed among the common People in *Pembrokeſhire*, *South Wales*, as he ſays, for Time immemorial, which may be called the * Infriction of the Small Pocks. Some of the dry

* Mr. *Wright* of *Haverfordweſt* obſerves, in his Letter of *February* 15, 1722, on this curious Subject, to Mr. *Bevan*, of *London*, that there are two large Villages near *Milford* Harbour, St. *Iſhmael*'s and *Marloes*, the old Inhabitants of which ſay, it has been a Practice with them Time out of Mind; and that particularly one *William Allen* of the former, then 90 Years old, declared to very creditable Perſons, that this Practice was uſed all his Time; and that he well remembered his Mother's telling him it was ſo in hers, and that ſhe procured the Small Pocks that way herſelf.— This may be reaſonably preſumed to make that Practice of 158 Years ſtanding there, reckoning from this Year 1761 backwards; but how much older it may have been there, or whether the *Circaſſians* had their Method earlier, is impoſſible, perhaps, to determine.

dry Puſtules are to be procured (by Purchaſe it ſeems) and rubbed hard upon the naked Arm or Leg, the Event of which is ſaid to be as effectual, and ſucceſsful, as that of Inoculation. Now ſuppoſing no variolous Steam or Odour to enter by the Mouth or Noſtrils during Infriction, this Sort of Infection will be very ſimilar to that, which is accidentally imbibed by the ſuperficial inhaling and inſorbing Veſſels; and which probably does not occur as often as that by the Breath or Smell. This Device however, ſome medical Gentlemen, who imagine the Surgeons, perhaps, ſufficiently attentive to, and ſucceſsful in, a Monopoly of Inoculation, have mentioned as worthy of reviving; notwithſtanding this ſtill leaves it a Work of the Hand, but ſuch indeed as any Hand may perform. Were we to admit here (which ſeems barely poſſible, and is yet the utmoſt that can be contended for) that the Infriction of this Poiſon, through the Surface of any Limb, may diſpoſe to a greater Derivation of its Conſequences there; yet as there is no palpable Ulcer or Outlet, which ſeems a moſt material Circumſtance; and as our Purpoſe is to regard the Health and Intereſt of the whole Community, or rather of the whole Species, without Reſpect to, or Reſentment of, the diſtinct Emolument of any particular Society, we cannot conſiſtently conſider this Infriction as equally ſalutary with Inoculation. Neither is it as effectual; for ſince the firſt Impreſſion of this Book the late Dr. Conyers, Phyſician of the Foundling Hoſpital, gene-

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rouſly acknowleged, that he rubbed the variolous Matter into four Children there, without infecting one of them. This has been printed in the philoſophical Tranſactions. DIEMERBROECK (1) and (2) HODGES, who bravely devoted themſelves to all the repeated Hazards of the Plague for the Service of their different Countries, agree, that Iſſues were found the moſt effectual Preſervatives from that Contagion; and add, that after manifeſt Symptoms of its Reception, they often diſcharged a thin, bloody, or even blackiſh Matter, to the Security of the Patient. It is ſurely then no unjuſt Inference to ſuppoſe, that Inciſions, rendered ulcerous by the variolous Infection, may prove full as attractive of the ſimilar Principle, which has been tranſmitted thro' them to the Blood. We ſhall conclude this Clauſe of variolous Infriction by obſerving, that Mr. *Owen*'s was ſomething more, as he rubbed the Back of his Hand with the Back of a Penknife, 'till ſome little Excoriation or Soreneſs enſued, before he applied the Scab. This was certainly inoculating the Diſeaſe, tho' coarſely, as well as their pricking the Skin with Pins dipped in the Matter; which others of them did.

Having juſt mentioned the prophylactic Uſe of Iſſues, even in the Plague, may we not ſeaſonably ſuggeſt the poſſible Benefit of them to ſuch Adults as dread the Small Pocks in every Shape, and yet are obliged to reſide, or to come, within the Sphere of its Infection? And ſhould they

(1) *De Peſte*. P. 150, 151, 357. (2) *Loimolog*. P. 240, 241.

they finally reſolve on Inoculation, may not the Infection of ſuch an Outlet, as the Humours had been for ſome Time accuſtomed to, promiſe well for a more copious Diſcharge than a recent Inciſion? That the Lymph may be infected here rather before the red Globules, does not ſeem to be any exaſperating Circumſtance: and that old Iſſues will effectually tranſmit the Contagion to the Blood I have repeatedly, and never unhappily, * experienced. But with Regard to former Iſſues, applied for other Purpoſes, we are to conſider well, whether the Diſorder they were applied for is removed; and how far it may be revived by this Diſeaſe, or its Cauſe be likely to co-operate with the Infection. But to return to the Operation.

As it was experienced that the crural Inciſions, eſpecially in groſs Habits, were more difficult to heal and cicatrize than thoſe in the Arms, the former are now pretty generally diſuſed; and in the main juſtly enough. Moſt Inoculators diſapprove them, from the Inflammations that generally attend them; and doubtleſs there ought to be ſome better Reaſon for inflicting a tedious Ulcer on the Patient, than the conſequent Protraction of his Surgeon's Attendance. Nevertheleſs I have imagined, that a reflecting Phyſician

 may

* Since the writing this, a Correſpondent from *Southampton* informs me, that Infection by Iſſues was the late general Practice in *Blandford*, *Dorſetſhire*, where they loſt three out of 309 Inoculated. It may ſufficiently obviate Dr. *Fuller*'s Miſapprehenſion concerning them in Scenes of variolous Infection; he was for drying old ones up, if it might be conveniently done, ſuppoſing they might let in variolous Matter without manual Application.

may ſometimes incline to an Inciſion in the Leg, where the Patient's Age and Habit, Complexion and Teguments, made him apprehenſive of a plentiful Fuel. Such a topical Ulcer or two, in ſuch a Patient, might certainly prove troubleſome after the Diſeaſe; but every other Indication muſt give Place to one truly vital: and wherever a great, or conſiderable Aſſimilation is expected, every Precaution muſt be uſed to ſolicit its entire external Diſcharge, and all poſſible Diverſion of it from the Face too: ſince if the external *Carotid*, which is ramified over that and the Scalp, tranſmits a conſiderable Quantity of the variolated Blood to the Surface of the Head, it is to be feared the internal *Carotid*, ſpringing from the ſame Trunk, and going to the Brain and its Membranes, may be, in ſome correſponding Proportion, loaded with it. Now if the Stimulation at the Inciſions has the derivatory Conſequences, all Writers on this Subject have allowed; which (abſtracted from Preparation, *&c.*) is probably the critical Advantage and very Hinge of Inoculation, a ſtronger Revulſion from the Head may be expected from theſe Ulcers in the Legs; ſince the deſcending Branches of the *Aorta*, as the *Iliacs*, and their Diviſions again, will probably from hence be charged with a greater Proportion of the variolated Blood, to the Eaſement of the *Carotids* and *Vertebrals*, which can certainly be attended with no bad Conſequence. A greater Suppuration from theſe depending Iſſues, on the Maturation of the Puſtules, will be another ſalu-

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tary Conſequence; as that has been ſuppoſed, by ſome, one preventing Cauſe of the ſecondary Fever, which ſo ſeldom occurs by Inoculation, and whoſe Abſence is ſo eſſential an Advantage of it. But after all, we apprehend it will *ſeldom* be neceſſary to inflict theſe Inciſions in the Legs, which in ſome Habits may be attended with very tedious and diſagreable Conſequences.

It may be uſeful here to conſider, Why the Character and Degree of the Small Pocks ſhould be eſtimated from their Quantity and Appearance in the Face, which SYDENHAM obſerves, and Experience has confirmed, it is right to do; tho' I cannot recollect that any Writer has explained the *Rationale* of it. This, however, a very unſtrained Extenſion of the Analogy between the Diſtemper and vinous Fermentation will conduct us, I had almoſt ſaid, to a certain Diſcovery of. For as the febrile State of the Blood in the *Apparatus* correſponded as ſtrictly with * vinous Fermentation, as was poſſible between a vital and a vegetable Fluid; ſo Eruption as cloſely anſwers to the Diſtillation recurred to, after a certain Term and Degree of Fermentation, for ſeparating the more active, ſulphurous, and inflaming Particles of the Liquor from the more phlegmatic and weak. Now the volatilizing Operation of Heat, one of the moſt grand and efficient Proceſſes in Nature, conſiſts in ſuch a Subtilization of the Particles of its Subject, as renders them lighter than our common *Medium*, the Air, thro' which

* See P. 73, 74.

which they then neceſſarily aſcend with different Velocities. Hence, as what firſt riſes in the Alembic, and, after Condenſation, runs from the Worm, is ſo flagrant, that it muſt prove deleterious in a very few Ounces alone; ſo in Eruption, the Puſtules that appear firſt, and very generally about the Face and Neck, pretty certainly contain the moſt inflamed and volatilized Principles of the Blood: and if the augmented variolous Poiſon is, as ſome have imagined, alſo exalted in the Habit, it ſeems likely, that its moſt energetic, its moſt flaming Particles will be attached to ſuch Principles. Hence a copious, quick and fiery Eruption in the Face will too certainly indicate an exquiſite and fatal Diſſolution of the vital Conſiſtence of the Blood. Thus the very learned HALLER juſtly obſerves, the moſt volatile and active *Miaſmata* break out in the Face. The whole Paſſage well deſerves a * Reference: And in a former Diſorder of my own, which terminated in a liberal *Diaphoreſis*, I experienced the Certainty of it. Perhaps it is difficult to aſſign a better Reaſon than this for the Pits and Scars of the Face by this Diſtemper, while the reſt of the Body is very generally † unmarked. But if the Erup-

* Validas hinc particulas, et motus ſui tenaces, caput adire non improbabile. Nonne id demonſtrat argenti vivi effectus in ſolo fere capite? ſpirituum inebriantium velox in caput potentia? camphorae vis ſtuporem brevem excitans? calor faciei et ſudor frequentior quam in ulla parte corporis, miaſmatum ſumme volatilium in facie eruptio? — *Prim. lin. Phyſiol.* § 339.

† Some have imputed theſe Marks to the Face being more expoſed to the cooler Air than the Body, which indeed ſeems incloſed in a kind of warm relaxing Bath by the Covering, that may

Eruptions are diſtinct, gradual, and mildly complexioned there, we have little Reaſon to apprehend, that the latter Runnings on the Trunk and Limbs, tho' numerous, will be pregnant with more virulent Contents: ſince it has been manifeſt from the different Symptoms and Event of the Diſeaſe, in Patients under equal Eruption, that the *Pabulum* may be nearly of the ſame Quantity in two Habits, yet naturally, and ſometimes from Accident, leſs acrid in one than the other. But that the moſt acrid are very generally firſt emitted in all is evident in Fact, from the frequent Remiſſion of the Fever, and moſt of the Symptoms, on the firſt Day of Eruption, and not ſeldom, in a mild Diſeaſe, within a very few* Hours

may concur, at leaſt, to this viſible Difference. They affirm too this Pitting has been prevented by applying Gold Leaf over the whole Face after Eruption. I confeſs my own Dread of any Attempt that may prevent or obſtruct the Tranſpiration of the morbid *Effluvia*, and particularly of thoſe from the Face. The chief Occaſion for this Device would be in a confluent or coherent Pock, for a few and diſtinct ſcarcely ever deform; and checking the Tranſpiration of a very few would ſeem leſs dangerous. But in a threatening Degree of this Diſeaſe, I ſhould be fearful, that ſuch a Practice regarded the Preſervation of Beauty only: and yet perhaps ſome Beauties, under the Apprehenſion of ſo dreadful an Eclipſe, may willingly hazard the Experiment.

* I have ſeen ſome Years ſince a remarkable Inſtance of this by Inoculation. Miſs FREEMAN was affected in the *Apparatus* with a conſiderable Propenſity to Vomiting, and had a quick febrile Pulſe. Viſiting her the tenth Morning from Inoculation, her Pulſe was calm and all her Symptoms vaniſhed; whence I concluded, tho' it did not viſibly preſent itſelf, there muſt have been ſome Eruption; and, upon a cloſer Inſpection, I diſcovered two Puſtules. She might have about 50 in all, but not a Moment's Sickneſs after theſe two. Nor is it difficult to conceive, that even before actual Eruption, whenever all the infected Particles are ſo far extruded into the Ducts, that terminate in the Surface,

Hours after its Appearance. Where we are pretty certain of Eruption then, does not this ſuggeſt a temperate and diluting *Regimen* in the *Apparatus*, and no ſuch Intenſion of the morbid Heat, as may augment its depredatory Operation? That we are to avoid direct and palpable Refrigeration in moſt variolous Caſes, is from another Motive, *viz.* that the aſſimilated Particles ſhould meet with no Obſtruction in their Expulſion to the Surface, after they have remained for their ordinary Term within; leſt, at ſo critical a Juncture, their mortal Retroceſſion or ſtriking in, as it is called, ſhould be the Conſequence. Moreover, beſides the greater Viroſity of the earlieſt Eruptions, their very Situation may be a perilous Circumſtance; ſince on a ſudden Sinking of the Pocks, a premature Detumeſcence of the Face, or an inſufficient Suppuration there, a more ſudden Tranſlation of the Poiſon on the vital Nerves may be apprehended. Hence if we could, where Bleeding is indicated in the *Apparatus*, by taking it from the Foot, and by tepid Bathings and gentle Frictions of the lower Extremities, invite ſome Portion of the earlier Eruption from the Head, it might be compaſſing a very ſalutary Point, which I ſincerely think I have ſeen effected: and which appears to me ſo eſſential a Point of Practice, that I hope my Attention to the Reaſon of it will excuſe

Surface, that they cannot retreat into the refluent Veins (to be ſecreted by any of the viſceral Glands, or glandular Texture of the Brain) all internal Sickneſs muſt ceaſe. This Period may be called the Term of Extrication, to which Eruption ſpeedily ſucceeds.

cuſe this Digreſſion from the immediate Subject of this Section.

From an Obſervation of the Benefits of a free Diſcharge, our moſt experienced Inoculators probably extended their Inciſions to the Length of an Inch. Whether it were from the ſame Reflection that they inoculated both Arms, or with a View of making the Scratch appear doubly operoſe, I cannot determine; but poſſibly there may be ſome Reaſon for not making two indiſcriminately. Dr. BUTINI of *Geneva*, in his *Traitè de la petite Verole*, juſtly remarks, that the Advantages reſulting from a free Diſcharge ſhould not be leſſened without ſome particular Reaſon; adding, the Bandage may ſlip from only one Arm oftner than from both.* The moſt alarming Subjects, I confeſs, would diſpoſe me moſt to two Ulcerations: but in Subjects, where a moderate Aſſimilation might reaſonably be expected, one may be ſufficient: and in very young ones a ſmaller Orifice might anſwer as well. They are generally diſpoſed to ſpread and dilate in the Courſe of the Diſeaſe, which is no bad Hint of their Service. The Inciſions may be made with very little Pain. I have ſeen a Girl about three Years old ſcarcely wince for one; but have heard that a few, who were apt to be convulſed almoſt at the Sight of a Lancet, and could not be chea-

* My more imperfect Acquaintance with the *French* Language, when I firſt publiſhed this Treatiſe, made me miſtake (P. 156 firſt Edition) the Senſe of this Paſſage in this Gentleman's rational Treatiſe; of which I ſince made a publick Acknowlegement in the *Journal Britannique*, by Favour of my Friend Dr. MATY.

ted into an Inciſion, have had a ſlight Veſication or two raiſed by a little *Cantharides*, or Epiſpaſtic, applied within the Slit of a cloſely adheſive Plaiſter, and the *Pus* was applied after cutting and removing the Cuticle and Slough. This is conſiderably more painful; however there is little Fear of the Inſect counter-working the Infection.

But having been invited to *Paris* in 1756, on Account of Inoculation, I muſt take Leave to expatiate a little on this Method of infecting, by Veſication or Bliſter, which was the only one made uſe of by the learned Dr. TRONCHIN of *Geneva* there, who ſucceſsfully thus infected the DUKE of CHARTRES, and MADAM MONPENSIER, Son and Daughter of the DUKE of ORLEANS, with eight or nine others, to the beſt of my Recollection. For the Satisfaction of the DUKES of ROCHFACOULT and d'ESTISAC (the former of whom, as a *French* Patriot, was at the Expence of lodging and fully accommodating five poor Children, as ſo many Tryals of Inoculation) I attended and infected the five *Gratis*, the three oldeſt of about ſeven Years old, by Inciſion, the two youngeſt of about three, by Veſication. The Girl by Inciſion had a pretty moderate, but very kindly, ſprinkling, the two Boys very few: the two by Bliſters, a Boy, and Girl, rather leſs: *Dudis* a very fair delicate little Boy, not having above three or four, all of which had not Matter enough to infect one Patient. Neither indeed was there any Thing to be called Suppuration from the veſicated Spots of either of them,

but

but a Redneſs attended with conſiderable Soreneſs, and ſenſible Exſudation or Moiſture. It was performed, after the veſicated Cuticle had been removed, by applying the infected Thread, rolled up in a ſmall flat Circle or Coil, to the denuded *Cutis* or Skin, and keeping it on by a mild, and moderately adheſive, Plaiſter, or a Compreſs and broad Fillet. This little Coil contained a Thread at leaſt four or five Times as long, as what is ordinarily uſed to infect an Adult by a ſingle Inciſion; for I have known Children often infected with one of about a Quarter of an Inch: and doubtleſs an infected Pledget would have been a more convenient Application here, but our Matter had been already collected in Threads. Beſide, as no Blood-Veſſel was opened in this Way, I imagined a greater Quantity of *Pus* might be neceſſary, which the Conſequence ſhewed to have been by no means exceſſive.

Theſe different Methods of giving the Small Pocks, produced ſome Diſpute among the Faculty at *Paris*, as to the Preference of either; a Majority, (at leaſt among my few Acquaintance) of thoſe who approv'd the Infection by Art, preferring it by Inciſion too. For notwithſtanding all thoſe infected by Veſication recovered in common with the Inoculated; and by what I have heard, might, upon the whole, have a ſmaller Proportion of Eruption, (MADAM WALL, a beautiful young Widow prepared and inoculated by Dr. HOSTY ſolely, having had a Confluence with the uſual violent Symptoms) yet as the Suppuration

was affirmed to be ſeldom ſo conſiſtent or compleat in the veſicated, a few Diſorders, tho' attended with no laſting bad Conſequence, happened to a few of the moſt important Patients thus infected. Dr. PETIT, the DUKE of ORLEANS' domeſtic Phyſician, informed me, that MADAM MONPENSIER had an Inflammation in her Eyes. I heard, at the *Hôtel de Belleiſle*, that the DUKE of *Chartres* had a ſmall Degree of a *Hydrocephalus*, which ſome aſcribed to changing his Cap too ſoon: and Dr. *Hoſty* told me, the DUKE of *Eſtiſac's* Son, Grandſon to the DUKE of *Rochfacoult*, had a Sort of eryſipelatous Eruption after the Concluſion of the Small Pocks by Veſication. On the other Hand, as the late COUNT of *Giſors* paſſed through a very regular and benign Diſeaſe, with a copious, but very diſtinct Eruption, and laudable bright Suppuration, by Inciſion, without the leaſt impairing or confining Conſequence (having been purged the eighteenth from Inoculation, and going very alertly abroad with about fifty red Spots, but ſcarcely one Pit in his Face) the *Pariſians* ſaid in general, they really believed him ſecure from a ſecond Infection, which they often doubted of ſuch of the artificially infected, in either Way, as had but very few: theſe Circumſtances operated very greatly to the Preference of Inciſions. For my own Part, I can conceive the Blood to be more thoroughly depurated and diſcharged of the variolous Humours in this Way than by the Bliſters, in which only the Extremities of the miliary Glands, and of a

few

few Lymphatics are expoſed to imbibe the Matter. Wherever we open either a venal or arterial Capillary, we are certain there is Lymph or *Serum* as well as red Blood; tho' the latter is naturally excluded both from the Lymphatics, and the excretory Ducts, as well as from the convoluted and ſecretory Canals, of the Glands. Hence I am ſatisfied a greater Proportion muſt fail of receiving Infection in this Manner, than that which ordinarily happens by Inciſion; and I ſhould ſuſpect ſuch, as had but a very few Puſtules after Veſication, to be rather more expoſed to a ſecond Infection, than thoſe who had an equal Number by Inoculation, with a proper Inflammation of, and Diſcharge from, the Orifice. I have ſtrictly repreſented the State of *Dudis*'s 3 or 4 Puſtules, and I heard that at leaſt one of Dr. TRONCHIN's Patients, whoſe Name I have forgot, had as few, and them few as obſcurely. It is certain however in Fact, that this Veſication will generally and ſafely impart the Small Pocks.

The very learned and elegant Dr. SENAC, having been deſirous of ſeeing the Preference of theſe two Methods diſcuſſed (and probably for ſome very important Reaſons) I did myſelf the Honour of addreſſing a latin Letter from *Paris* to him on the Subject, after I had waited on him at *Verſailles*, with a Copy of my former Impreſſion. It contained in Subſtance theſe Arguments I have here abridged; remarking (as one Argument tending to prove the Blood's being leſs thoroughly deſpumated in Conſequence of this Bliſ-

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ter than of Inciſion) the much greater Relief received, in a ſevere Attack of the Small Pocks, from a natural and moderate Bleeding at the Noſe, than from a much greater Quantity of Urine; even though it ſhould prove more concocted than it generally does, at the Invaſion of the natural Diſeaſe. But I refer the learned Reader to the Letter at large in the Appendix; intreating his Indulgence alſo, for my inſerting there a latin Compliment, upon his Inoculation, (for I owed him a great many) to the accompliſhed, the brave, and truly amiable * COUNT of GISORS, to whom I was indebted for ſome very diſtinguiſhing

* This very deſerving young Nobleman, whom I have heard propoſed in *France* as a Model for thoſe of his own Rank and Age, I had the Honour of ſolely preparing and inoculating, about his 24th Year. Dr. HOSTY alſo attended throughout the Diſtemper, and was very uſeful as an Interpreter; but the Difference, I conceive, of the Count's final Behaviour to us ſufficiently demonſtrated, on whom his own Confidence, and that of his noble Friends, reſted. Nevertheleſs upon the general Satisfaction, which his quick and perfect Recovery occaſioned, as he was ſo greatly eſteemed; and indeed it was impoſſible to know him well (abſtracted from any perſonal Obligation) without honouring him, Dr. HOSTY and his Friends ſpread a Report, that he had prepared and inoculated the COUNT of *Giſors*, and that I attended the Count under his Directions. A worthy elderly Gentleman of my Acquaintance at *Paris* heard this, particularly at the DUKE of FITZ-JAMES's, at whoſe *Villa*, among other Places, it had been induſtriouſly propagated; and after informing himſelf from me of the Truth, the very honeſt old Briton ſet it right there. Now as all my Preſcriptions for the Count were at Mr. ROUEL's (I think was the Name) Apothecary *Rue Jacob*; and as Mr. HOSTY himſelf had told me, he would leave the Preparation and Inoculation of the Count entirely to me, there is no Doubt, if the Event had been fatal, but he would have told the real Truth, and have averred he had contributed no otherwiſe to it than by looking on; and ſo have left me to get off as I could; having told me, that if the

tinguiſhing Honours at *Verſailles*, and much Amity, exerted in that delicate and preventing Manner,

the Count died, he would not make the laſt Viſit. What the Conſequence of this, from a Practice approved only by a few, might have proved to myſelf, in an Enemy's Country, and in Regard to a very popular young Nobleman, an only Child, and greatly beloved by his Domeſtics, I really cannot determine: but I ſhall never forget what the Count ſaid to me one Night alone, ſitting by his Bed-ſide, when he found himſelf paſt every Apprehenſion of Danger. The Words (we generally converſed in Latin) upon my Integrity were, *Quid faceres ſi mortuus eſſem?* To this I anſwered, after a very ſhort Pauſe — *Forſitan ipſe etiam morerer:* To which he replyed negatively, *Non, non,* or *Boh, Boh,* I cannot certainly recollect which; but I remember perfectly well it intimated, that it would not have been quite ſo bad neither. This however I am very conſcious of, that I ſhould, in ſuch a Caſe, have willingly compounded for my Baggage, having lived with the Count throughout the Diſeaſe, and ſome time after it, at *Varſovie*, a Houſe juſt without the *Barriere* of *Paris*, hired for his Inoculation.

When the *Bulletins* (a ſhort Bill wrote every Morning and ſigned by the attending Phyſician, concerning the preſent State of a Patient of great Quality) were iſſued, upon the Count's Sickening, Mr *Hoſty*, after talking with me each Morning, as of Courſe, about his preſent State, uſed to write the Subſtance of it in French, and after a Clerk's making a ſufficient Number of Copies for the Servants of all Enquirers, ſubſcribed his own Name, without deſiring mine. The good Count hearing of this, and enquiring why Dr. *Kirkpatrick* had not ſigned the *Bulletins*, Mr. *Hoſty* told him, it was to protect me from being proſecuted by the Faculty of *Paris*, for attending without being free of it. Of this I had not the leaſt Apprehenſion, having met with the greateſt good Nature, Generoſity, and Politeneſs from every Member I had ſeen of it, except himſelf; having even been requeſted by ſome of them to return to *France*, and eſtabliſh the Practice. The Count anſwered, he was unacquainted with the Cuſtoms of the Faculty, but deſired I might ſign the *Bulletins*, ſent to the DUKES of *Belleiſle* and of *Nivernois*, and all his Friends. After this Command Mr. *Hoſty* uſed indeed to aſk me to ſign, having the Modeſty and Politeneſs to leave Room enough for me to ſubſcribe below him; (and at the ſame Time ſent *Bulletins* ſigned only by himſelf to moſt of his own Acquaintance.) This however I made no Scruple to do, after

ner, which muſt endear the lighteſt Benefit to every Man of Reflection. His heroic Fall at *Crevelt*, of which a Line in the Compliment ſeemed a little prophetic, has, within my own Knowlege, made him even lamented by ſome of his gallant Enemies, whoſe generous Feelings diſpoſe them to reverence true Fortitude univerſally.

Hoping Pardon for this partly neceſſary Digreſſion, I recur to the earlieſt Methods of Inciſion, by obſerving, that as the *Greek* Woman made her Scratches ſomewhat oblique, Mr. BOYLSTON of *New England* made them quite tranſverſe, and I have ſeen one ſuch Orifice in *London*. What the

ter a very plain Remonſtrance of his Behaviour to a Man, whom he had earneſtly and repeatedly ſolicited by Letters into *France*; and who brought a Recommendation of himſelf to the Count, from his worthy and ingenious Friend Dr. MATY here: upon Reading of which the Count immediately ſaid, he hoped I had met with the *Politeſſe* of *France*, and that he would be inoculated whenever I thought proper. He was 3 or 4 Weeks preparing for the Diſeaſe, throughout which we had but one obſcure Day, towards the latter End of Eruption: but this Heavineſs over his Eyebrows, for he never had any *Delirium* nor Vomiting, was removed the ſame Evening by a natural Hæmorrhage from the Noſe, of a Spoonful or more. The enſuing Courſe of the Diſeaſe was ſo void of Danger, as to render our noble Patient and all about him chearful. On theſe Occaſions a Man of moderate Obſervation might diſcern, that the Count's unaffected Delicacy and Sentiment could have willingly excuſed my Colleague's coarſe and frequent *Entendres*, and the inceſſant Horſe-Laughs with which *himſelf* applauded them. In truth the Count was too condeſcendingly polite to repreſs them directly; but a good Diſtinguiſher of Smiles might juſtly aſcribe his, at ſuch Junctures, much oftener to Contempt than Approbation. It were eaſy to make proper Reflections on theſe certain undiſguiſed Facts, to which I could as truly add many others, tending to the ſame unfair and grovling Purpoſe. But I ſubmit theſe few ſimply to the Opinion of the Publick, not without an Apology for my having intruded ſo much with Regard to myſelf, in a Treatiſe intended for their general Service.

the Operators propoſed by this, or whether they conſidered it merely as indifferent, they can only ſay. Poſſibly they concluded ſuch an Inciſion might be diſpoſed, of itſelf, to a more fretful and inflammatory State, and thence terminate in an Ulcer diſcharging more than that from a longitudinal one; and, if this were not the Reaſon, it is difficult perhaps to aſſign a better. But we may obſerve here, that as the Lips of ſuch an Orifice would be apt to retrocede or gape more than the other, and that Bandage would not diſpoſe them to meet, their Retortion or Spreading would be leſs ſignificant of the Infection's having taken, than it is in the other; which is equally applicable to their Inflammation too. And notwithſtanding there can be little Doubt of Infection's ſucceeding this Way, as BOYLSTON's Patients very generally took (tho' it could not be ſaid that one certain Puſtule enſued from this tranſverſe Inciſion in a Child of ſix Weeks here) yet thoſe, who are uneaſy about the ulcerous State of the Inciſions after the Diſeaſe, may well incline to prefer the longitudinal ones, the preſent general Practice.

With Regard to the Depth of the Inciſions (which are made over the Contiguity of the *Biceps* and *Bracheius internus* as commodiouſly as any where; and on the Place for Iſſues in the Legs) TIMONI ſays, the Skin is to be ript up a little tranſverſely. PYLARINI ſays, the Women ſeparated the Skin a little from the Fleſh: this ſeems as if they went thro' the *Cutis*. Dr. NET-

TLETON, who lays little Streſs on the Length of the Inciſions, thinks if they are ſo deep as to cut thro' the Skin in the Middle of the Inciſion, they diſcharge the more. I do not find that our firſt Operator, MAITLAND, ſays any thing of their Depth. Some eminent Surgeons at preſent ſeem to make a Point of cutting into, but not thro', the *Cutis*, ſo as to expoſe the cellular Membrane. And this it is ſaid they do to prevent the Sloughs, that ſeparate frequently when that Membrane is laid bare; and which, they ſuppoſe, render the Ulcer leſs tractable after the Diſeaſe. Such Inciſions I have ſeen, where the Infection has been effectually communicated, but imagined that, in general, they afforded a ſmaller Diſcharge, than thoſe which but juſt expoſe the adipoſe Membrane, by dividing the *Cutis*; very few of which I have ever known unkindly after the Termination of the Diſeaſe, and the cuſtomary Purges. Beſides, if Dr. GRASHUIS is right in concluding this Membrane the Seat, and the *Adeps*, in a great Meaſure, the Subject of Suppuration, it will be no bad medical Reaſon for reaching it. But undoubtedly the leaſt membranous or fleſhy Fibre of a Muſcle ſhould be carefully avoided, as the ſtimulating Matter, admitted there, might erode the *Aponeuroſis* and Subſtance of the Muſcles, and produce a troubleſome ſinuous Ulcer. This was very probably the Caſe of a young Gentleman near *Maidſtone* in *Kent*, who, with a favourable Small Pocks by Inoculation, had an Arm ſo terribly ulcerated,

that

that an Amputation was apprehended, tho' at laſt it proved unneceſſary. And beſides the Hazard of ſuch a Conſequence, we have already * hinted the Imprudence of infuſing the *Pus* immediately into any larger Veſſel, whence it might be leſs gradually diffuſed thro' the Maſs. The *Engliſh*, who may juſtly be conſidered as the Improvers or Reformers of this Operation, have rendered it much ſimpler, and leſs painful and tedious than it was in *Turkey*. They find no Occaſion for mixing the *Pus* carefully, as the *Grecian* Inoculatrix did, with the iſſuing Blood; if the ſmalleſt Appearance of the latter ſtain the Skin, they find their effectual Commixture almoſt a perpetual Conſequence. The Threads, whether of Flax, Cotton or Silk (tho' the two former are chiefly uſed with us) may be conveniently imbued by threading a Needle, edged or even round, with one not too fine, and doubling it. This Needle is to be paſſed thro' two or three well digeſted Puſtules; tho' I have ſometimes obtained Matter enough from one, very ripe and turgid, to infect two or three Subjects. A Length of ſuch Threads equal to that of the Inciſions is to be inſerted into each. Over theſe the Inoculator applies a ſmall Pledget, armed with a † Digeſtive;

* See P. 69, 70.

† I have heard a very ſenſible Phyſician diſapprove the Application of the Digeſtive at firſt, as ſuppoſing the little early Suppuration may partly depend on it, and ſo become leſs ſignificant of the *Pus* having taken. Undoubtedly it is not an eſſential Application at this Time; and yet as an unarmed Pledget, or naked

Corn-

and on this again a ſmall ſimple Plaiſter. An eaſy Roller may be applied for a Security to the Dreſſings, tho' I have known the Plaiſter keep the Matter on effectually. Some let theſe remain on one, and others two Days; but we ſhall find a ſmall Difference here immaterial; tho' perhaps two Days may make us a little more certain of the Efficacy of the Application than one.

From an abundant Caution, which I have always obſerved, the Patient is directed to keep an Handkerchief over his Noſe and Mouth, 'till it is applied. The *Greek* Inoculatrix had the Matter brought, and, we are to ſuppoſe, taken, by her Servant; and ſome have been ſaid ſince to uſe the ſame Precaution; leſt, if the Perſon, who infuſes the Matter, had alſo taken it juſt before, which they thought eſſential, there might be ſome Danger of his giving the natural Infection previous to the artificial. There can ſurely be no Error in great Caution on ſuch important Occaſions; and it was certainly thoughtleſs in the Father of the *Tripolitan* Ambaſſador, to ſend his Children to be inoculated at the Houſe of the Infected; leſt the Matter ſhould cool perhaps. But we muſt obſerve, that our reſerving the Contagion in Threads (which we ſhall prove, may be ſuffered to dry too) inſtead of taking it in Shells and Phials as they did, and pouring out Drops of it, is not near ſo likely to diffuſe natural Conta-

Compreſs, is ſometimes apt to ſtick to the Orifice, from a Drop or two of Blood iſſuing upon and hardening them, I think it may ſave a little Pain, and is therefore rather commodious.

Contagion. Beſides, a Quantity of it kept in a liquid Form may putrify, as moſt extravaſated animal Humours do; when it may be doubted, whether it will give the Small Pocks, and whether it may not give ſomething worſe: as we ſee the Humours of an Egg rendered ſo acrid by Putrefaction, as to become violently emetic, and it has been ſaid deleteriouſly ſo, on ſwallowing a very ſmall Quantity; and what it might do, on being infuſed into the Blood, we can only ſurmize.

Theſe Drops naturally lead me to conſider the neceſſary Quantity, or Doſe, of Infection; and the rather, as ſome of the early Oppoſers of Inoculation, and particularly Dr. WAGSTAFFE, have inſiſted on the Uncertainty of the Doſe of variolous *Pus*, requiſite to different Ages and Conſtitutions, as a material Objection to the Practice. But theſe Objectors would have been prudent in reflecting previouſly, how they could aſcertain a proper Doſe of the natural Contagion, or determine the Quantities received by different infectious Accidents: ſince this Objection makes very ſtrongly for Inoculation, if the *Quantum* of Infection be truly material, as the artificial may admit of a pretty exact Aſcertainment, the natural of none. Now certainly the moſt obvious Suppoſition in this Reſpect muſt be, that a Perſon expoſed to the *Effluvia* of a Patient under a full Suppuration from this Diſeaſe, is likely to receive a greater, a more ſuddenly and violently operative Doſe of Infection, from a Stream, or even a Ray,

of

of its moſt volatile and diſentangled Particles, than from a Thread imbued with the animal Humours involving them.

We are happy enough however, in the equal Succeſs of very different Doſes of this involving *Pus*, to be convinced that this is not the capital, the moſt intereſting, Circumſtance relating to the Operation. A ſingle Spark will explode a Magazine, and a Firebrand can do no more. The *Greeks'* numerous Drops and Inciſions, and *Maitland's* three largely imbued and repeated Pledgets on each Malefactor, terminated ſucceſsfully; and very much leſs has ſometimes excited a conſiderable, and even a mortal, Diſeaſe. However, as the Application of more than is neceſſary is at leaſt indelicate, let us contemplate, if we can, that Exility of Infection which has ſometimes ſufficed. The worthy and ingenious Dr. NETTLETON, who intereſted himſelf early in this Practice, from a benevolent Principle, informs us, that having found it troubleſome to collect ſuch a Quantity of the Matter, as to infuſe two or three Drops of it into each Wound, of which he made three, he ſecured a ſmall Pledget of infected Cotton on the Wound. We may ſuppoſe he was not long ſolicitous about the Moiſture of his Pledgets, when he avers his Surprize, that the Quantity of *Pus* received into the Veſſels could not amount to the hundredth Part of a Grain: from whence we may moderately conclude, the Doſe uſed at *Conſtantinople* ſufficient to infect above a hundred; and if we ſuppoſe the

the Weight of a full Drop of this *Pus* to be a Grain, it will make it ſufficient for many Hundreds. But further, the extreme Exility of the Particles of efficacious infecting Matter will be ſo evaneſcent and inconceivable, as ſcarcely to allow the Imaginations' inveſting it with a material Form. For in Fact I have known ſuch a ſcarcely diſcernible Particle of *Pus* infect, that I never ſaw, nor heard of a Balance exquiſite enough to aſcertain ſuch a Fraction of a Grain, as it muſt have been: and if we reflect, that this was but the Vehicle of Infection, our Aſtoniſhment muſt ſtill be heightened. Yet as ſome of the variolous *Pus*, or the *Miaſmata* involved in it, muſt be immitted and received, tho' in a minute Quantity, to infect; it is evident that the infecting Threads may be paſſed thro' one or more ripe Puſtules; that they may be cut into any requiſite Lengths; and be of what Number or Thickneſs we chuſe. It is poſſible perhaps to weigh a pretty long, or, if ſhort, not very ſlender Thread, while yet uninfected, and after it has been imbued, which may be cut, either while moiſt, or after it is dry again, into ſuch imponderable Lengths of one Inch or leſs, that Infection may really be divided into very minute Fractions of a Grain; and then be doſed out, not only to different Ages, but to our Apprehenſions of the Quantity of inherent Fuel: ſince it may ſeem eligible, to ſome, to apply the ſmalleſt Proportion of the former to the greateſt of this; and to diſtribute it into two Inciſions, for the

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Purpoſes of a double Stimulation and Diſcharge. This is certainly the beſt Reaſon for making two, and not the Apprehenſion of a ſingle one failing; ſince if there be Fuel in the Habit, and the Spark is applied to it, one will take, and if there is none, two will be ineffectual. But after all, as ſome Few have failed of Infection, where there has been Reaſon to ſuſpect an over-acted and ſimpering Delicacy, in a very ſuperficial Scratch, and the Application of the very ſmalleſt Quantity poſſible of Matter: and as ſuch Diſappointments are productive of conſiderable Anxiety, to the Patient at leaſt, good Senſe will ſufficiently inſtruct every one who has reflected on this Subject, that if the Inciſion is not ſo deep as to violate or expoſe any Fibre of a Muſcle, or of its Membrane, an extreme Solicitude about its being more ſuperficial is unneceſſary: and further, that tho' a very ſmall Quantity of the *Pus*, if inſinuated, will infect, yet a little more is not likely to have any accumulative * Effect; in ſhort, that the preſent Conſtitution and Temperament of the Perſon receiving is the grand affecting Circumſtance.

But whatever be the requiſite Quantity of this Infection, it may be aſked, how long its *Medium*, or Vehicle, ſhould remain within the Wounds. TIMONI ſays they were to be covered a few Hours, to prevent the Cloths from rubbing off the Matter. PYLARINI ſays a Bandage was applied, but does not add how long it remained before it was firſt removed. We have juſt obſerved that

* See P. 210.

that ſome let the infected Threads or Lint lie on 48 Hours; others 24, after which ſome have turned the external Part of the Lint to the Bottom of the Orifice; and all have found the ſame infectious Conſequence without any ſenſible Variation. But that the Principles of Infection are as ſpeedily abſorbed in this palpable Vehicle, as they are inſpired in their aerial one, and perhaps ſtrongly attracted into ſome receiving Bodies, ſeems probable from Dr. NETTLETON's informing us, that he has ſometimes rubbed the Pledget only once over the Wound, without binding it on, and found the Purpoſe ſufficiently anſwered. Serjeant RANBY, who has been long engaged in this Practice, to the Benefit of many Perſons of high Condition and Conſequence, and to whom I have had ſome Obligations upon this Subject, (for which I have conſtantly cited him) and on a few other Occaſions, has favoured me with the following Fact on this Point.

Having inoculated a Widow Lady of 30, and calling next Day to remove the Dreſſings, ſhe aſked his Opinion, whether the Pock had taken; and, being anſwered in the Affirmative, appeared ſatisfied, and paſſed thro' the enſuing Diſeaſe very favourably. But on her entire Recovery, and diſcharging all her medical Attendants, ſhe informed them, that in a very little Time after the Operation ſhe repented of it, and removing the infected Threads ſoon after Mr. RANBY's Departure, put in common ones, and applied the former Dreſſings over them. It ſeems indeed

that we may reaſonably extend what we ſaid on the Quantity of Infection, to the Term of its Application too, *viz.* that a ſhort Contact will probably be ſufficient, and a longer but equivalent: which double Poſition may be ſimilarly verified by a former Inſtance of my own Knowlege. The learned Dr. MATY, Author of the *Journal Britannique*, doing me the Favour of accepting a few Viſits to his three Children, before and after Inoculation, which Dr. D'ARGENT, then practiſing Surgery, performed, in one Arm each; on removing the Dreſſings, there was ſome Doubt, whether the Youngeſt, of near three Years old, had taken, as her Arm was leſs inflamed than her Brother's or Siſter's; tho' I remember I judged it had. It was agreed however to procure a little more Pock, which was applied one or two Days after; notwithſtanding the Inflammation then became a little more evident. She ſickened no ſooner than the others, having the mildeſt Symptoms and feweſt Eruptions of the three. Here a ſecond * Doſe, which made the Application twice as long, was not attended with the leaſt accumulative Effect; and the ſmaller Inflammation, as all the Inciſions were ſuperficial and pretty equal, was certainly owing to this tender Subject's containing the leaſt variolous Fuel.

It is curious to inveſtigate, and may be uſeful to diſcover, the utmoſt Term for which the variolous

* The Malefactors, inoculated in both Arms and one Leg *Auguſt* 9, 1721, received freſh Matter on the 12th following. *Maitland*'s Account P. 21.

riolous Principles may be preſerved in any Material, with ſufficient Efficacy to effectuate this Operation. For tho' it may be always recently procurable here, more or leſs, that is not the Caſe in Country Towns, Villages or Seats, where People might deſire the Operation for themſelves or their Friends, and yet be unwilling to go for it, where the Diſeaſe actually exiſted. Here it ſhould be obſerved with Gratitude, that Providence ſeems to have regarded even the Circumſtances of Individuals ſo ſituated and diſpoſed: as we have certain Demonſtration that the *Pus*, however dry, and very probably even when friable, in Threads or Lint, retains an efficacious Vigour for ſeveral Weeks; for a Term ſufficient to convey it a few thouſand Miles at leaſt, tho' we are as yet unacquainted with the exact Commencement of its Inactivity. Materials containing the Cauſe of the Plague have been conſidered as incommunicative of it after a Twelvemonth; but I conceive this to be on a Suppoſition, that the infected Materials were not packed up cloſe, which may make an important Difference: ſince Air itſelf, however pure and ſimple, from very long Confinement and Stagnation, has become putrid and morbific. But let us ſuppoſe the Efficacy of the variolous Vapour to be preſerved as long by Care, as it is without it, and ſometimes is, in Spight of our Carefulneſs to extinguiſh it. This will extend it to ſeveral Months. I knew one Inſtance of a Gentleman being infected on

entering a Room, full three Months after a Perſon had lain there in the Diſeaſe. A Surgeon of my Acquaintance effectually inoculated two Children of a Gentleman's at *Endfield*, with Pock taken to my Knowlege from a Child inoculated in *London* a full Month before. A Woman is ſaid to have been unwaringly inoculated at *Lindfield*, by being bled with a Lancet uſed in taking Pock nine Days before. I have uſed it frequently ſeveral Days after taking, from a Fortnight to full two Months, and found its Operation very generally commence about the ordinary Term, and in the common Way. The COUNT of *Giſors* was infected with Matter taken fifteen Days. Dr. BUTINI affirms, it has been kept effectually at *Geneva*, where Inoculation is now happily introduced, full four Months: and it may perhaps appear * hereafter to keep for a longer Term, which

* This Conjecture has been verified ſince in the following Manner. Looking one Morning over ſome infected Threads, kept in labelled Phials and dated, I found a pretty long one taken in *May* 1751 from Mrs. *Sarah Eaves*. It was no ways mouldy, but very little altered in Colour; and having been well impregnated, was ſtiff, and ſomewhat ſpringy like Wire. As I imagined it might be effectual enough to impart the Small Pocks, I gave rather more than two Inches of it (from a Reflexion on its Age) to a particular and curious Friend, who had the Care of a Work-houſe, in which were a few Children, wiſhing him to try it the firſt Opportunity. He paſſed it ſoon after, in the Manner of a Seton, through the Skin of a young Child's Arm, moving it about each Day, like a Seton. The Child ſicken'd on the 6th from Inoculation, and had Eruption on the 8th; having I think in the whole, rather more than two hundred, but did very well, as did alſo a few others who apparently caught the Diſeaſe from this one. This Matter was applied in *April* 1757, ſo that it wanted but one Month to be full ſix Years old. To ſuppreſs no pertinent Circumſtance, the natural Diſeaſe had been in the Work-houſe about five or

which ſome Gentlemen have imagined might conduce to its milder Operation; tho' this ſeems rather conjectured, than eſtabliſhed on adequate and ſpecific Facts; and certainly the beſt Reaſon for keeping it is to prevent a Diſappointment, when good freſh Matter cannot eaſily be procured. We have ſufficiently evinced, however, the ſuperfluous Care of conveying it immediately from the Decumbent to the Expectant, and of keeping

or ſix Weeks before this Child's Inoculation. But as neither himſelf, nor any of the other Children had ſickened in all that Interval; as his inoculated Arm inflamed and diſcharged abundantly; as he was taken down about the ordinary Term; had the Symptoms, for the Quantity in a meer Infant, mild, as by Inoculation; and as none of the other Children ſickened till a few Days after his Pock turned, my Friend concurred with me in aſcribing this Diſeaſe to the Infuſion of this Matter; which Opinion however is fairly ſubmitted to the Reader, on this certain and undiſguiſed State of the Caſe. But the Duration of this Matter was very ſhort, if compared with that related to a creditable Friend of Mr. CHAIS, by an Engliſh Lady, ‖ who was aſſured by a Bengaleſe Phyſician, that inoculated two of her Children at *Bengal*, that he had then by him ſome variolous Matter preſerved in twiſted Silk, which had been taken by his Grandfather or Great-Grandfather. It is not ſaid indeed that theſe Children were inoculated with this Matter: and tho' we give entire Credit to the Engliſh Lady, an equal Credit to her *Indian* Doctor is not a neceſſary Conſequence. Silk indeed being a wonderful Gum, further concocted and elaborated by an animal Body, may be peculiarly adapted perhaps to intangle and retain this volatile Poiſon for the longeſt Term poſſible: and I have now a little Matter taken in red Silk, *July* 2, 1757, which I really think would infect. But this Thread I have before mentioned was of Flax; and whenever I have found the infected Threads prove mouldy, or duſty as it were, from whatever Cauſe, I have never uſed them; as I ſuppoſed the volatile Poiſon muſt eſcape, whenever the Coheſion of the viſcous or unctuous Matter intangling it was plainly deſtroyed: beſides my Ignorance of what Conſequences might reſult from applying this putrid animal Powder or Duſt by Inciſions to a wounded living Body. See Page 205.

‖ *Eſſai Apologetique*. P. 122.

keeping it warm during the ſhort Interval: as we continually find the *Pus* from Inoculation, which the *Greeks* rejected for this Operation, juſt equivalent to that from the natural Diſeaſe. But on this Occaſion, as on moſt others, we prove the Truth of the Axiom, *Artem experientia fecit.*

The earlieſt Intimation of the Pock's taking ſeems to be a little Itching at, or about, the Orifice: and upon uncovering it a Day or two after, there is often a little Matter on the Dreſſings, and a ſenſible receding of the Lips of the Wound, with a ſmall Redneſs on each or either. Soon after there appears a kind of white ſkin-like Line, or dry Slough, longitudinally in, or rather over, the Orifice, which is conſidered as an infallible Mark of Infection. Serjeant AMYAND was for fixing this Appearance to the fifth Day, and yet I think it has ſometimes, tho' not often, appeared earlier. I have known ſome the ſecond or third Day ſenſible of a Tingling, as they called it, down to the Fingers of the inoculated Arm: and I remember a rugged Youth of Fourteen, who had, on the third, ſuch a ſudden ſtrong Tug, or Contraction of the inoculated Arm, that he gave an inſtantaneous Spring from the Force and Surprize of it; and from his Relation of it I could compare it to nothing ſo much as the electrical Shock. This Lad, who was bound to the Sea, but prepared on Shore, and, as we thought, under a proper *Regimen*, uſed to regale himſelf ſecretly, even after the Operation, with Slices of ſalt Beef he had the Art to procure from on Board.

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He had indeed a very large Crop of the diſtinct Kind, with the moſt plentiful Suppuration I ever ſaw by Inoculation; yet was very ſoon as alert as ever, his many Pits being very ſuperficial, and without the leaſt Scar or Deformity. But where the Pock does not infect, there is an Abſence of all theſe Appearances and Effects, of which I have ſeen a few Inſtances, that have been more particularly mentioned in another Place.

This Section, in the firſt Edition, concluded with an Apology to the valuable Profeſſion of Surgeons, for my deſcribing this little manual Operation. But as I am ſince informed, and indeed have known, that the Members of that Profeſſion here in general get themſelves employed in all the Circumſtances previous to Inoculation, and indeed throughout the Whole of it, as excluſively as they can of every other; they muſt admit, it becomes a ſtrict Imitation, or juſt Retribution, of their own Conduct, that Phyſicians ſhould cut or ſcratch for the Small Pocks, ſince they prepare for, and preſcribe in it. For my own Particular, let every Inoculator inform himſelf ſo fully of the Nature and Treatment of this Diſeaſe, as to afford the beſt Service poſſible to the Patients he preſumes to make, by giving it to them; and I ſhall heartily wiſh all his Patients uninterrupted Succeſs, whatever his own Arrangement and Denomination may be. It is not merely Names, but Things and their eſſential Conſequences, that deſerve

ſerve the Attention of all the Wiſe and Good: and it is certain, that the greater the Number of proper Subjects are, who ſhall be inoculated under all prudent Precautions, and with every judicious Advantage, this Nation muſt prove the more populous; and conſequently, while its Virtues continue or increaſe, the more happy and reſpectable.

SECTION VIII.

Of the moſt eligible Time of Life, and Seaſon of the Year, for Inoculation; and of the moſt proper and improper Subjects of it.

AS we may frequently obſerve, that, in the Deduction of a Syſtem founded on Reaſon, and verified by Experience, after the Illuſtration of a few fundamental Principles, an intelligent Reader anticipates many ſubordinate Points, as neceſſary Conſequences of them: thus, from what has been premiſed of the Nature of the external variolous Cauſe, of its Fuel in the human Conſtitution, and of that inflammatory Diſeaſe, that reſults from their Combination, every attentive Reader, methinks, would rationally infer (even ſuppoſing Experience to have been ſilent in the Caſe) that early Youth, and a bland Temperature of the Air, remote from either Exceſs of Heat or Cold, were Circumſtances we ſhould deſire in the Contingence of this Diſeaſe, and conſequently in the Communication of it. Yet obvious as this appears, to be rather cul-

pably redundant than defective on the important Subject profeſſedly treated of, we ſhall enquire into the Advantages and Diſadvantages of the different Stages of Life, and of the different Seaſons of the Year, for the Reception of, and all future Immunity from, this Diſtemper.

One conſiderable, and almoſt peculiar, Advantage of Childhood, or even of Infancy, for the Small Pocks is, that they cannot be ſuppoſed to have ſuperadded any adventitious variolous *Fomes* to their native Portion of it. Whether this were the prevailing Conſideration, that has determined ſome to recommend Inoculation to Infants at the Breaſt, and even in the very early Months, I am unable to ſay; tho' perhaps it were difficult to aſſign a better Reaſon for a Practice, to which there are ſome truly rational and medical Objections, beſides ſuch as are founded on common Prudence: ſome of which Objections become ſtill ſtronger in Reſpect to Infants reared without the Breaſt, who will not on that Account be the more exempted from ſore Mouths through the Eruption of the Diſeaſe; in which Situation the Want of that ſoft tepid Nouriſhment, and its ſoothing balmy Application to the ſore Lips and Tongue, may be ſeverely, or even fatally, experienced. Such, however, is our great natural Diverſity of this inborn *Pabulum*, that I have known an Infant of ſix Weeks die under ſuch a crouded Coherence, from natural Infection, that I was ſurprized to find, in a Subject of that Age, a ſufficient Maſs of Humours,

and

and ſufficiently fermentable, for ſo great an Eruption and Deſpumation; which very much exceeded that of all her five Brothers and Siſters, who were happily and eaſily conducted thro' Inoculation, about the ſame Seaſon. An Inſtance conſiderably parallel to this occurred in the Family of GEORGE TASH, Eſq; of *Ivor* in *Bucks*. The eldeſt of his ſix Daughters was married to CHRISTOPHER TOWERS, Eſq; and took the natural Diſeaſe, of which ſhe was very full, and, with great Difficulty, eſcaped thro' it. Her five Siſters, from ſeventeen to ſeven Years of Age, were inoculated by their Kinſman Mr. HARRIOT, with whom I had the Pleaſure of attending them. The Diſtemper was entirely mild and eaſy, tho' certain and evident: and their Nurſes declared they could not make out above 150 Puſtules among them all.* In this

 Inſtance

* This amazing Difference of the Small Pocks by natural and artificial Infection, in Perſons of the neareſt Conſanguinity (ſome entire Families having been obnoxious to the confluent, and others only to the diſtinct Sort) has inclined me to heſitate, whether the beſt Preparation and fitteſt Temperature of the Seaſon could be ſolely adequate Cauſes of it. It is evident the Circumſtance of Age was but little material here, the youngeſt out of twelve dying; the moſt advanced, who could not have a greater Eruption in Proportion to her Size, juſt eſcaping; and either of them certainly having more than the ten inoculated whom I attended. As I am unable then to inveſtigate all the Cauſes of this ſurprizing Difference in Perſons thus related, to my own Satisfaction (the Diſcharge by the Inciſions being but ſeldom conſiderable before Eruption) I would recommend it to the Penetration of others to diſcover — Whether the infuſed *Pus* may gradually effect ſuch an Alteration in the Form and Conſiſtence of the Blood, and from thence ſuch a different Oſcillation of the Solids, before actual Sickening, as ſhall concur to increaſe the Exercions of Perſpiration and Urine, with or without a Variation

Inſtance indeed, invertedly to the former, the greateſt *Pabulum* was the oldeſt too: and yet again

Variation of the Matter excreted, from that in an uninfected State. Any Alteration in the Quality of the Perſpiration might too probably be indiſcoverable by the human Organs, or even by Experiments; tho' the Urine, from 24 Hours after the Infuſion, might be conſidered by a Phyſician, who for this Purpoſe had obſerved it repeatedly before Infection, while the Patient lived exactly in the ſame Manner. But the Quantities of each might be aſcertained by medical Statics, and compared with thoſe before Infection: and if there was a certain Increaſe of each, or even of either after it, while the other kept up to its uſual Standard, it muſt plainly point to ſuch a gradual Abatement and Diſcharge of the variolous Fuel, as would correſpond to the comparatively ſmall Eruption of the Inoculated; whoſe ſubſequent Security infers, that Infection aſſimilates all it finds: but what becomes of that, which does neither appear nor remain, is the Difficulty. Yet as conſtant Experience demonſtrates, that the Pits in the Face from Inoculation are not ſo deep as from the natural Diſeaſe, and never riſe to the Deformity of a Scar; may we ſurmize that Inoculation, before actual ſickening, diſſipates and expels, by ſome of the fineſt Emunctories, the moſt volatilized and energic Part of this inherent Fuel? And will the * erratic Fluſhings that preſent and diſappear, and the ſlight Giddineſs, Laſſitude, and little ſickiſh Fits that ſometimes occur and entirely vaniſh again, before the real *Apparatus*, reflect ſome Probability on ſuch a Conjecture? ——— Further Time and Experience have ſince diſpoſed me to reflect on the conſiderable Quantity of a farinaceous Sediment in the Lemon-coloured Urine, that generally accompanies the firſt Sickening by Inoculation before the Symptoms riſe conſiderably, (and ſometimes even precedes any Sickening) and which ſeems to me to challenge the Regard and Attention of Phyſicians. I had obſerved p. 99. that Inoculation ſuperadded, as it were, a *Stadium* of, or about, a Week, previous to the manifeſt Invaſion of the Small Pocks. May not then this, frequently, very copious concocted Sediment at this Time be contemplated as the *Criſis* of this *Stadium*; and as materially conducing to the Mildneſs of the following Symptoms, and to the complete happy *Criſis* of the Diſeaſe? But the certain Reſolution of theſe Queries depending on ſtill further Obſervations, we ſuggeſt and ſubmit them to the Candour of our ſagacious medical Readers.

* Mr. *Maitland* obſerves that Maſter *Mountague*, inoculated at *Conſtantinople*, had bright red Spots in his Face after the third Day, that they diſappeared, and returned again at Times, 'till he ſickened. P. 7. He ſays the like Spots and Fluſhings happened to his Siſter, Miſs *Wortley*, inoculated here. P. 10. See his Account publiſhed 1722.

again the ſecond Siſter, the eldeſt of the inoculated Ladies, had the very ſlighteſt Eruption.

It ſeems reaſonable however to conclude, in general, that our Fluids are ſeldom better adapted for this Infection than in our healthy Infancy and Childhood, before we meddle with ſolid alcaleſcent Food. Nor has the bland foſtering Warmth of Infants an equal Tendency to exalt and volatilize the animal Humours, with the Heat that predominates at Puberty, and the Approaches to it; as the *Foetor* of their Urine and *Faeces* is manifeſtly leſs, from a ſmaller Proportion of ſulphureous and ſaline Particles. It is highly probable too, that during this Term, there is a ſmaller Proportion of red Globules in the tender Maſs; ſuch a Circumſtance being likely to correſpond better with the Tone of their Arteries, and the Circulation through their minuteſt Canals. Now in theſe Globules we have ſuppoſed the humoral *Pabulum* eſpecially to reſide; and their ſmaller Proportion in Reſpect of the ſerous ones, if we credit the experienced FULLER, diſpoſes to a leſs inflammatory and hectic State. In the healthieſt Infants, through the very early Months, it is wholly unuſual to ſee ruddy Cheeks; which muſt be either owing to ſuch a greater Denſity of the Teguments there, as prevents their Appearance; or to the ſerous Globules as yet chiefly circulating thro' thoſe fine capillary, ſuperficial Canals, which are afterwards ſufficiently dilated to admit the larger red ones: the preſent Confinement of which to the

larger

larger Veſſels, chiefly, muſt infer their ſmaller Proportion. HOMBERG beſides obſerves the Blood of young Animals to yield more Acid than that of Adults; and in Fact we find the Fluid ſeparated from it in the Stomach of a Calf manifeſtly acid, which is often the Caſe with Infants alſo; to which they owe thoſe Gripes and curdly Stools, that are pretty commonly relieved by the alcalious Abſorbents. Now ſuch a *Craſis* of the Fluids ſeems ſtrongly contraſted to the intenſely bilious one, which we conceive as very badly diſpoſed for the Small Pocks: and indeed the predominant Acid may be conſidered as having a ſimilar Analogy with the cooling Element, to that which the alcaleſcent inflammable *Diatheſis* has with Fire; and ſo may be ſuppoſed to reſtrain that high Efferveſcence and Fuſion, which precede and accompany the ſevereſt Degrees of this Diſtemper.

A further, and perhaps, not the leaſt Advantage of Childhood for this Malady is, their having no Idea, and of Conſequence, no Dread of it; which there is often much Reaſon to apprehend has conduced to its Fatality in Adults. It may be obſerved too, that the Inaction of Children, before they run about, prevents any Exaltation of the inflammable Principles of the Blood, through exceſſive Motion or Exerciſe. And if we add to this their great Proportion of natural Sleep, in Reſpect to that of Adults, which may not be unſerviceable in a Diſeaſe, wherein Sleep procured by Art has been found ſo beneficial,

perhaps

perhaps we have enumerated all the Advantages, and no very inconſiderable ones, which Infancy has with Regard to the Small Pocks.

Yet as it certainly has its Diſadvantages too, we muſt admit firſt, that the *vis vitæ*, or natural Strength, is very languid in ſuch tender Subjects; and that ſuppoſing their little Maſs pregnant with a conſiderable Proportion of the variolous Fuel, which will be leſs eaſy to diſcover in meer Infancy, it may require a greater Exertion from within, in order to a compleat Expulſion of the variolated Blood, than can always be expected from the feebler Contraction of their little Hearts, and the probably ſmaller Elaſticity of their Arteries. This is countenanced by Experience, as a great Proportion of thoſe Few who die of the natural Contagion, before its firſt *Criſis*, Eruption, are Infants, or very young Children, a ſmall Proportion indeed of Adults miſcarrying for Want of it. And this was the very Caſe of the Child of ten Months old, who failed under Inoculation, and whom I have already mentioned, as the ſole Inſtance of my ill Succeſs in it, (to the firſt Impreſſion of this Work) my ſingle Suffrage having been for deferring the Operation. In Reality we find the Pulſe of Infants very generally quick and ſmall, which commonly occurs in the laſt Scenes of moſt Diſeaſes in all Ages; as tho' the early Efforts to live, and Approaches to dying, conſiſted in a ſimilar Weakneſs of the vital Motion; and Nature endeavoured, in both, to compenſate for the Infirmity of the *Syſtole*, by

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the Frequency of it. The Cauſe of this may be, that the Ventricles of their Hearts not being contracted with ſufficient Force, for a compleat Expulſion of all the refluent Blood, they have not, ſo diſcernibly, that ſhort, yet ſenſible, Pauſe between the *Syſtole* and *Diaſtole*, which occurs in a more vigorous Stage of Life; and which is termed by BARTHOLINE, and others after him, the *Periſiſtole*. Beſides which, a greater Facility and Perfection of the vital Motions may be contracted from their very Continuance and Re-iteration; the Strength and State of the Organs improving at the ſame Time from their Growth and Exerciſe, which may be termed, perhaps, the Experience of the Conſtitution, or vital Oeconomy.

Furthermore, as we have a manifeſt vegetative Principle inherent in our Fabric, I have ſometimes indulged a Suppoſition; that beſides its general Operation to our Stature and Enlargement, by an Extenſion of the original Parts, throughout the Term of our Growth; there may be a more peculiar Exertion of it a little after the Birth, in a further Number of fleſhy, vaſcular and nervous Fibres; which might be involved in the fœtal ones (as the early Rudiments of ſome Plants viſibly are in their Seeds) but which were not extruded or explained in the *Uterus*. It ſometimes ſeems to me, as if Children did not poſitively ſee for ſome ſmall Term after the Birth, tho' their Eyes are not cloſed; but whether the *Velum Pupillae* be always effectually removed before

fore that great *Criſis* of Exiſtence, I ſubmit to more compleat and exquiſite Anatomiſts. It is ſome Time too before they appear to advert to Sound, or diſcover any Affections from Odours; Nature having judged it ſufficient to ſet the Organs of vital Motion immediately at work; and it being neceſſary, perhaps, from the very delicate Texture of their Brain, that their Senſations ſhould be extremely obtuſe at firſt: as we find Convulſions, and thoſe often without any other ſenſible Diſorder, particularly fatal in this earlieſt Stage of Life. As the Diſſection of the more manifeſt Nerves is ſufficiently difficult; and I have been aſſured by that excellent Anatomiſt, Dr. HUNTER, there is no Poſſibility of purſuing them near to their utmoſt Exility, the ſuppoſed Multiplication or Exertion of other nervous Filaments after the Birth (the Growth or Extenſion of the fœtal ones being indiſputable) is equally incapable of an affirmative or negative Demonſtration. Yet as their extraordinary Portion of Sleep, ſuppoſing them healthy, is a reaſonable Suggeſtion of their ſmall and ſlow nervous Secretion, which ſeems principally expended on the immediately vital Motions (all Senſations but that of Pain, all the Paſſions and Faculties, being as yet out of the Queſtion) it is probable that Nature, ſtill plaſtic, may be ſlowly extending, tuning, and poſſibly even further furniſhing theſe Organs of Senſe, and Inſtruments of Motion, after the Birth, whoſe Functions were unneceſſary, at leaſt, before it. And her having no foreign or external

Avocations may favour her in ſuch a ſecret Operation; whoſe gradual Effects we ſee, though its certain Mode be inexplicable.

But be theſe Suppoſitions true or falſe, will it be eligible, on their moderate Probability, to congratulate the new and tender Viſiter with the Preſent of a very early Diſeaſe; and to ſubject his vital Oeconomy to ſtruggle, while it may be, in a Manner, but practiſing to move? Beſides it ſeems reaſonable to infer, that Infants perſpire leſs than Children who uſe Exerciſe, which promotes it: for while the Circulation continues languid, there cannot be ſuch an Exertion to the Surface; from the Defect of which the ſore Heads and running Ears they are ſubject to on the Lap may conſiderably reſult: ſince we often find them vaniſh ſoon after they arrive at the free Uſe of their Legs; 'till when they ſeem to be Iſſues of Nature's own forming, to compenſate for the Defect of Perſpiration; as we find the artificial Iſſues generally relieve, and ſometimes cure, ſuch Effluxions in groſs humoral Children.

One final Purpoſe of Nature in this ſmaller Perſpiration, at the Dawn of Life, ſeems to be the ſpeedier Growth and Vigour of the tender Animal; which has been thought to occur in a greater Proportion for ſeveral Months after the Birth, than it ever does within an equal Term afterwards. It is true that our Trials of the Proportion of Perſpiration, with thoſe of the other Diſcharges, have been hitherto confined to adult Bodies; ſo that its Compariſon with them

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in Infants and Children has not yet appeared. But it ſhould ſeem ſufficient, in full grown Bodies, for the new Chyle to repair the Abraſions, and replace the *Diſpendium*, of the Machine; while a moderate *Surplus* is neceſſary to be retained in young growing ones, for a farther Addition to them. Now tho' in healthy young Children, who are generally plump and ſucculent, Nature is not ſuppoſed to retain what is noxious, for this Purpoſe; yet it may be preſumed the Fluids are ſomewhat the leſs pure for this partial cuticular Diſcharge: on which may probably depend the peculiar Propenſity of young Children to the Chicken and Swine Pocks, with other cuticular Diſorders from a ſlight Effervescence, to which Adults are rarely obnoxious. It may be doubted alſo, whether the red and white Gum, as Nurſes call their Eruptions in the Month, are not owing to that total Want of Perſpiration, which is probably a Circumſtance of the Fœtus; and which Eruptions, while they tend to purify the but very lately eventilated Blood, are, perhaps, particularly inſtrumental in commencing the future neceſſary Perſpiration. We muſt ſuppoſe then theſe moſt early Eruptions, common to all Infants, over, before any Perſon of common Senſe would dream of inoculating them.

And even in the Months that ſucceed from hence to the ordinary Commencement of Dentition, or Toothing, which may be ſuppoſed, on a *Medium*, to happen about the ſixth, I have often

imagined the Acidity, common to Children in the firſt Paſſages, to amount to Acrimony in ſome Habits; whence not only ſevere Gripes and curdly Stools, but even very green and mucous ones; in which Caſes, as I ſhould apprehend, that Infection would have but little Tendency to mend the unbalmy State of the Blood; I ſhould be fearful too, that ſuch an irritable Condition of the Bowels might prove a very exaſperating Circumſtance, and expoſe the tender Patient to a * dangerous Dyſentery, as the variolous Fuſion of the Humours advanced. Nevertheleſs if any, overlooking the Chance of ſuch Effects, were determined to inoculate within this Term, the Stools ſhould be conſidered, and ſuch morbid Appearances of them ſhould be effaced before the Operation.

I have likewiſe repeatedly obſerved, that in plump, full Infants, the Teguments are harſher, as well as thicker, than one at firſt would expect. The preſent Depth of thoſe Blood Veſſels, which, in ſome, prove apparently turgid as they grow up, is one Argument, at leaſt, of this; and ſuggeſts no bad Hint of that Abhorrence, which Nature has to Bleeding, during this Stage of Life. There is a much greater Difficulty in raiſing and detaching

* An Infant of ſix Months, inoculated ſome Years ſince, had Stools, in the *Apparatus*, conſiderably ſtreaked with Blood; but which changed very ſoon after Eruption. They gave me but little Alarm in this Stage, as the Fever and other Symptoms were moderate; and as I judged them but equivalent to a ſalutary Hæmorrhage by the Noſe, which would probably have happened to the ſame Patient in a more forward Term of Life. She had between twenty and thirty Puſtules in all.

detaching the Skin by the Fingers from the ſubjacent Muſcles, than in thoſe who are advanced enough to play about alertly; as if a further Extenſion of the Body was neceſſary to that Freedom and Extenuation of its Teguments, which is one happy Circumſtance for the Reception of the Small Pocks, as it diſpoſes to an eaſy Eruption of it: And this greater Reſiſtance at the Surface is likely to be of the worſe Conſequence, where the Contractions of the Heart are more feeble; our moſt hopeful Proſpect, in ſuch a Situation, being the ſmall Quantity of the Matter expected to be expelled. For, with Regard to the Exility or Smallneſs of the Veſſels, the Straitneſs of the excretory Ducts, and the State of the Integuments, there appears to be too much Crudeneſs and Immaturity in the early infantile Syſtem, to render it very pliable to this eruptive Diſeaſe; whence the previous Extrication is often attended with more Difficulty in this, than what uſually attends an equal variolous Aſſimilation in a ſubſequent Stage.

And here I ſhall endeavour to inforce by a few Facts, within my own Knowlege, what I had advanced in the firſt Edition, againſt the Inoculation of Children in the very early Months, or even Weeks, as ſome have then attempted it; ſince I find it is become rather a more popular Practice than it formerly was. I knew a Child of ſix Weeks old inoculated by her Father, an Apothecary, and another of ſix Months by the ſame Gentleman, neither of which had a ſingle

Eruption,

Eruption, nor any ſubſequent Complaint. Indeed as the Quantity of the Blood, more particularly of the red Blood, is very ſmall at this Term, and the Solids ſo inconſiderable in Reſpect of their future Weight and Extenſion; it is not unlikely that the inherent Fuel of the Small Pocks, may be proportionably ſo weak, and ſo little extended, as to be leſs ſuſceptible and retentive of the infuſed Matter, and leſs aſſimilable by it. This *Seminium*, or Fuel, at this Term, may have ſome Analogy to Seeds in their crude or lacteſcent State; when, tho' containing the Matter and ſome Principles eſſential to Vegetation, they are as yet too watery and immature, to be quickened and become productive by the moſt favourable Soil and Seaſon. From which Analogy I ſhould imagine the ineffectual Inoculation of ſuch Bodies, but an uncertain Security from a future Infection of the Diſeaſe. But ſuppoſe that in a warmer Habit, they might prove ſufficiently impregnated to produce it, at this very early Term of Life, what I have affirmed concerning the general Difficulty of Extrication in ſuch Bodies is certainly true. The little Child of ſix Months, whom I have mentioned above,* as having bloody Stools on Sickening, had a much higher Fever, with ſeverer Symptoms, and a later Eruption than her Siſter, of between three and four Years, who had about half as many Puſtules more. I have lately ſeen an Infant of five Months inoculated by a Surgeon; her Eruption was far from being numerous, tho' it might

* P. 228.

might amount to ſome Dozens, out of all which not a ſingle Doſe of Matter could be procured: notwithſtanding which, the Fever was ſo violent before Eruption, that her Parents were under the greateſt Apprehenſions for her Safety. Now if all Perſons who have been Witneſſes to the like Facts, were to atteſt them as publickly, I am clear they would not be very few. But I am unfeignedly ſurprized, that a little common Reflection [for medical Reflection is more confined] on the Bills of Mortality is not effectual to extinguiſh this dangerous, precipitate, and often inefficacious Practice. I obſerve, in turning over half a Dozen of theſe Bills at a Venture, that the Deaths under two Years of Age exceeds, in five of them, all the Deaths from above two Years to fifty Years of Age, incluſive; and in a ſixth Bill, all the Deaths to ſixty Years of Age incluſive. How many Infants are ſuddenly ſnatched off by a Convulſion, or ſcarcely interrupted Suceſſion of them, without any other evident Diſeaſe! as if in the ſpinning out the extending Nerves from the exquiſite and indiſcoverable Texture of the Brain (which may be conſidered as a kind of *Tomentum* or Tow here) ſome moſt important and vital Filaments ſnapped, or otherwiſe proved ſo impermeable, as, after a few ineffectual Struggles, to put a final Stop to the vital Motions. But to whatever untraceable Cauſe ſuch an early and moſt frequent Mortality may be aſcribed, has all the Wiſdom of Medicine been ſufficient to ſhorten the melancholy Liſt? Has

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the Operator any competent Reaſon for concluding, that ſuch a Circumſtance may not happen, independent of the Small Pocks he introduces, during theſe tendereſt Months or Weeks, which ſeem indeed a longer *Criſis*, a kind of ſtruggling towards firmer Life? Has the greateſt Admirer of Inoculation a Perſuaſion of its Power to prevent, or, for its own Credit, to prorogue ſuch a fatal Contingence? He may be very certain however, if his tender Patient expires from ſuch a ſupervening Cauſe ſoon after Inoculation; in the Small Pocks; or within a few Weeks after it, that the Fatality will be aſcribed to the Operation, tho' perhaps with leſs Juſtice, than to the unthinking and imprudent Operator. And this happening, tho' but a few Times, will be apt to extend ſuch a Diſcredit to the moſt judicious Uſe of Inoculation, that many proper Subjects, from dreading and declining it, may be deſtroyed by the natural Diſeaſe. It is not a ſufficient Juſtification to ſay here, tho' I believe it may be truly ſaid, that many inoculated within the Age of ſix Months, and a few within ſix Weeks, have ſucceeded. A Diſeaſe that is to be given to a Perſon in Health, ought to be given with its leaſt poſſible Diſadvantages (for in raging Infections and particular Situations a few may be unavoidable) and with all its poſſible Advantages. This is not the Caſe, if it is applyed at ſuch a brittle Time of Life, when ſuch a Majority ſink from the Imperfection of their vital Motions; perhaps thro' an inſufficient nervous Secretion to continue them. We have

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ſhewn, that ſome Infants have miſſed of Infection, and the Sequel of this Section will ſhew, ‖ that ſeveral have miſcarried under it. I was ſufficiently conſiſtent with my former Precautions on this Head, to declare my own Judgment againſt inoculating the Child of ſix Months already mentioned; who ſucceeded nevertheleſs, as many others may. But the Father being a Surgeon and Apothecary took it upon himſelf, and I complimented him very readily with my Advice and Attendance. Doubtleſs the Operators, who are ſo forward to inoculate ſuch meer Infants, heartily intend and hope to ſucceed: and it is no Wonder if their Fears are often as limited as their Faculties. Some are not to be inſtructed even from repeated Miſcarriages. In Truth, upon the Whole, this precipitate Practice has alſo a ſordid and illiberal Aſpect; it looks as if they had reſolved, that No-body ſhould die without incurring the Small Pocks; as if a Child ſhould not be born alive without a Capitation Tax to the Inoculators. Upon this Scheme, indeed, it can never be done too early, and Dr. WESSEL's *Embryos** are excepted, only from their Situation.

When the Infant advances a few Months, ſuppoſe to five or ſix, the Terms of Dentition or Toothing begins, tho' often varying three or

* This Gentleman having advertiſed an empirical *Noſtrum* to ſtrengthen the Child in the Womb, and called it *Tinctura Embryonum*, he was rallied by ſome Wags, who pretended to imagine his Tincture was made from *Embryos*, as the obſolete officinal Oils of Whelps, Swallows, and Scorpions were made by boiling thoſe Animals in Oil.

‖ See P. 236.

four in different Bodies. As this is a very painful and morbid Period with ſome, and not ſeldom attended with febrile and convulſive Diſorders, I ſhould by no means be for ſuperadding the Operation of the variolous Cauſe to them, or to the probable Intervention of them. Dr. FULLER thinks it dangerous in Children at this Term, and I have already mentioned a Patient of my own miſcarrying under Inoculation at the Age of ten Months. Yet I have no Doubt, as I ſaid, but many inoculated in the tender Months have done, and may do, very well: I remember a lovely Babe of ſix Months that got thro' all the little Peril of the artificial Diſeaſe; and tho' her left Eye * was weak and watery from the Birth, there has not been the ſlighteſt Eruption near it; and what little Alteration happened to it was rather for the better. It is indeed a reaſonable Preſumption the ſame Individuals can never undergo a ſmaller Eruption at any ſubſequent Term: tho' I muſt confeſs, upon the whole, for the Reaſons already ſpecified, I imagine it is not fully availing ourſelves of every favourable Circumſtance. Should they happen to have ſuch ſore Mouths as ſometimes occur in the Diſeaſe, which may prevent their ſucking or drinking, their Situation would be dangerous; a material Circumſtance, which I find Mr. RANBY has alſo adverted to, who diſapproves Inoculation, under four Years of

* A gentle ſmall Bliſter was applied behind the left Ear, which roſe and run well: this Effluxion was directed to be encouraged as it dried, by frequent Frictions; and the Inciſion was made in her right Arm, inſtead of the left.

of Age. It appears from Dr. SCHEUCHZER's Tables, that out of twenty-four inoculated under one Year old, from the Year 1721 to 1728, inclusive, two died. Mr. GOLDWYER of *Salisbury* informed me, that one of the four dying there after Inoculation was a Child about twelve Months old, who had but seven Pustules, and was twice purged; but had a Fever very soon after from Dentition, and died on cutting a second Tooth. BOYLSTON inoculated but six, from nine Months to two Years old, who all recovered; but such a Number is too small to form an Estimate from, as the natural Disease does not generally kill more than one in six or seven.

The Duration of Infancy should seem, from the Etymology of the Word, to determine with the fair Commencement of articulate Speech. As this is considerably various in the little Individuals, to give it a reasonable Extent, we shall suppose them about two Years of Age; when we may as generally allow them Strength and Agility for Self-motion. When their Terrors from the first Essays of this new Faculty are just subdued, it is pleasant to contemplate the Exultation of the pretty Innocents in the early Exercise of it: and perhaps no future Vehicle, by Land or Water, will ever give them an equal Delight with the Novelty and Consciousness of this self-moving Power. Their *vis vitae*, their nervous Secretion, and cuticular Discharge are now increased, to their manifest Vividity and Lightness; and yet there is no considerable Extenuation of their Ad-

vantages for the Diſeaſe, if they have been properly dieted and regulated. It muſt be conſidered however, that the painful and febrile cutting of their Eye Teeth now occurs to many; in Reſpect to which critical Seaſon, in the Children of ſeveral Families, the earlier Months have been prefered to theſe by ſome Practitioners. But to incur the leaſt Danger (which is certainly our Duty on this Occaſion) when we reflect once more on the great Majority of Deaths under two Years, we ſhall probably judge it prudent, at leaſt, to get the young variolous Volunteer (who muſt, at this Age, become ſuch by his natural Proxies) conſiderably beyond the ſlippery Borders of it. Nevertheleſs, where the natural Diſeaſe ſhould be very epidemical and unuſually fatal to Children then; where the Subjects were not ailing and infirm for that Age; and it was very inconvenient to move them from the Sphere of Infection, I ſhould think the Operation, even at this Term, eligible; but from ſuch Circumſtances only. From thirty-four inoculated here, within the Term of eight Years, from the Age of one to two, four died, which is nearly one in eight: one of the deceaſed at *Saliſbury* ſome Years ſince was alſo under two Years, and died of a confluent Diſeaſe.

From two upwards to five the Number of Funerals is ſenſibly contracted; tho' ſtill remarkably more than in the ſucceeding Stage. And indeed I ſhould conſider the Age of five and its *Environs*, which I may call from four to ſeven incluſive,

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as a very eligible Term for Inoculation: tho' undoubtedly one Child may be as proper a Subject for it at three, as another at four, or upwards; ſuch different Fitneſſes being of Courſe ſubmitted to the particular Gentlemen conſulted on ſuch Occaſions. Their natural Diſpoſitions now become more manifeſt: their Faculties begin to dawn through their Looks: their collecting and compounding Ideas very entertainingly evidence the firmer, and, if I may be pardoned the Expreſſion, the more inhabitable Structure of the Brain, and the compleater Functions of its ſenſitive Emiſſaries. A proportionable Invigoration of the vital ones is a very obvious Inference. Their Teguments are generally as well diſpoſed for the Diſtemper now as they are ever like to be: As yet we may ſuppoſe few of them affected with much Dread of it; and when the Operation is reſolved on, a Majority of them may be eaſily deceived into it, without infuſing the leaſt Apprehenſion of any ſubſequent Diſorder. And now as ſoon as the enſuing Diſeaſe is happily determined, which is next to univerſally the Caſe, what Hours, what Years of Anxiety are the Offspring delivered from, by this prudent, this truly parental and early Pre-occupation of the Small Pocks, at that Seaſon of Life, when the mild and ductile Strength of the Subject concur, with many other Circumſtances, to conſtitute the moſt benign Temperature for the Diſeaſe; a Situation not always to be equalled afterwards! About this Time too Children generally become

more

more tractable; and Miſs begins to form a ſufficient Eſtimate of Beauty, to abſtain from ſcratching or picking, if diſpoſed to it: beſides if a more conſiderable Eruption, than what uſually happens to the inoculated about this Age, ſhould occur, there is ſtill a ſufficient Term to out-grow them before Maturity. Of ſixty-five inoculated here, within the Term already mentioned, from the Age of two to three, but one died. One of the four deceaſed at *Saliſbury* was about three Years old, and had a confluent and chryſtalline Pock. BOYLSTON reckons fourteen inoculated from two to five Years old, who all recovered, by his Tables.

From ſeven to Puberty, or its near Approaches, we ſhall conſider as the next favourable Period for the Operation. The remarkable Decreaſe of Funerals in this Stage evinces a conſiderable Invigoration of the Habit, and ſome Approaches towards the Knitting and Eſtabliſhment of the Conſtitution. But as the *Vis vitae* (ſince we continually ſuppoſe a healthy Subject) is abundantly ſufficient now, their Teguments become a little more reſiſting, not from Crudity, but Firmneſs. If they have been indulged in taſting ſtrong Liquors, and a plentiful Courſe of animal Food, the variolous Fuel may have been augmented alſo; (tho' the different Energy of the natural Portion is a moſt important Circumſtance) and, what we have obſerved may be of ſome bad Conſequence, many within this Term have a Dread of the Diſtemper. Their frequent Uſe

of

of good ripe Fruit, if ſound and not exceſſive, can be of little Diſſervice to them; and we may pretty juſtly conclude, on the whole, that they get as ſafely through Inoculation as thoſe within the former Term. In a hundred of each inoculated, it is very probable the Number of Eruptions of thoſe in the later *Stadium* would exceed; tho' it really happens to a Majority of theſe, to have no more than they undergo very eaſily. So that where they have not had the Diſeaſe in any of the preceding Terms, and are likely to live in the Way of it, it ſeems entirely prudent to embrace it in this. It is pretty uſual for thoſe inoculated within this Period, to have Hæmorrhages from the Noſe in the Attack, which are generally ſerviceable. Out of 257 inoculated here, within the aforeſaid Term, from the Age of five to ten, three died, 249 only taking a compleat Small Pocks, which makes the Proportion dying by Inoculation, within theſe Ages, one in eighty-three. BOYLSTON has but ſixteen inoculated, from five to ten, who all did well. Perhaps, on the whole, no other Stage of Life is more eligible than ſuch an Interval, for the Operation.

At the Evolutions, and in the early Progreſs, of Puberty, there is a ſtupendous Alteration in the animal Frame. The vegetative Principle is now extraordinarily exerted in the Explication of particular Organizations. Even new Parts emerge, new Secretions ſpring, and a new Paſſion, or a very different Direction of a former one, attended with a various Modification of thoſe

thoſe already experienced, enſues. The Voice contracts another Tone; the whole Form, the Eyes and Aſpect, another Air; they imbibe, and they impreſs, Affections entirely novel; and a conſcious *Je ne ſçai quoi*, which Looks can only expreſs, characterizes this Spring, this firſt Germination of the ſelf-renewing Faculty. The natural Humidity is apparently now in its full Proportion; and the cutaneous Diſcharge in its full Vigour, which, in ſome Habits, becomes leſs agreeable, tho' inoffenſive in moſt, and in a few, as it is recorded of ALEXANDER, even redolent. Very probably Mr. THOMPSON thought of this laſt Circumſtance, in his admirable Deſcription of Spring, when, ſpeaking of a Virgin in this Stage, he ſays, " She breaths of Youth." Not incorreſpondent to ſuch a State is that of the *Magnolia* (as the Curious term the Tulip-leaved Laurel) and ſome other flowering Trees, of ſeveral Years Growth before they bloom; previous to which a new Series of Veſſels are either then formed, or firſt explained, and infuſed with a peculiar Fluid from the Plant, diffuſive of its Odours, and preparatory to the Continuance of its Kind.

The moſt univerſal Effects in the Creation contract a Familiarity, from their Frequency, that renders them, how charming ſoever, too cheap to the ſuperficial Obſerver: But the philoſophical and contemplative, who inveſtigate them as fas as human Study, and their Portion of human Penetration, enable them; while they diſcover

cover enough of the interior Oeconomy of Nature in the Renovation of all Bodies, to engage their moſt rational Admiration; at the ſame Time experience ſomething ſo latent, ſo coy and inacceſſible, as I may term it, in the efficacious Proceſs, that it immediately refers them to the ſuper-intendant Volition of a ſupreme and perfect Intelligence, with a *Deus! en Deus!* and obliges them to conſider the whole as miraculous, in ſpight of its continual Occurrence, its unfailing Regularity and Tenour. But to return from ſtill Life — We may well infer, that about this Period, in the human Conſtitution, the high and inflammable Principles of our Maſs become more copious and potent; the natural *Fomes* of the Small Pocks is further diffuſed through the augmented and expanded Maſs; the adventitious may be conſiderably increaſed by high and ſuperfluous Aliment; and both may be exalted by violent Exerciſe. During this Term, under which, to make it the more comprehenſive, we ſhall include the Subjects of the Diſeaſe from fifteen to twenty-five, accidental Infection has undoubtedly a conſiderable Number of Victims; the natural Heat and Vigour too frequently cooperating with the inflammatory Symptoms to their own Extinction. Yet may it be neceſſary to add here, that as this Stage is generally preferable to any ſubſequent, it ſeems better to inoculate now than to poſtpone it; tho' in general we are to expect a more copious Eruption, and often a higher Degree of variolous Symptoms,

than in the former Periods. SCHEUCHZER's Tables make 140 inoculated here from ten to fifteen, of whom 131 only took compleatly, and but one died. From fifteen to twenty Years of of Age, 104 were inoculated, ninety-five compleatly taking, three imperfectly, and two dying, that is one in forty-eight nearly. BOYLSTON has 29 inoculated, from ten to fifteen, who all took and recovered; and fifty-one, from fifteen to twenty, who all took, and of whom one died.

From twenty-five Years upwards, it is highly probable, the Conſtitution never improves for the Reception of the Small Pocks; unleſs from the Accident of ſome extraordinary Relaxation or Diſcharge, that damps or leſſens, for a Time, its natural Fuel in the Blood, without leaving any morbid Impreſſion on the *Viſcera*. The Teguments, and the Solids in general, approach to a more tenſe and rigid State; the red Globules probably become more fibrous and compact; whence a greater Orgaſm, from a fiercer Struggling with the variolous Infection; tho' little conducive to the Security of the Patient, whoſe phyſical Situation, in this Caſe, may be compared to the political one of over-wealthy and potent States; whence Luxury, Corruption, Faction and thoſe civil Confuſions increaſe, which ſometimes terminate in their Diſſolution, as the Roman Lyric ſays of antient *Rome*,

Suis ipſa Roma viribus ruit.

Such

Such Conſtitutions ſeem directly oppoſite to thoſe which SYDENHAM, I imagine, has deſigned under his εὐμεταβολοι, his eaſily changeable, whoſe mild Fluids ſubmit to a ſmall Aſſimilation; and whoſe free Ducts and yielding Teguments afford it a ready Eruption without much perceivable Sickneſs. And tho' ſuch oppoſite Conſtitutions appear in the ſame, as well as at different Stages of Life; yet as we are here abſtractedly enquiring into the various, and general Aptitude of the different Stages for Inoculation, we may affirm, the unyielding and inflammable Subjects will moſt frequently occur from about thirty or thirty-five, when the Body has generally attained its moſt compleat Succulence and Vigour, to about fifty in healthy Men; in the more robuſt, to fifty-four or fifty-five, when the *cruda viridiſque Senectus*, the luſty Spring of approaching Age, has been reckoned to begin; and which may extend in ſtrong *Stamina* even to ſeventy, at which Time decrepit Age commences with a Majority of thoſe, who arrive at theſe Years. Undoubtedly during what may be called the robuſt and ſettled Term of Life, the Space between Youth and Age, which may be ſettled pretty generally in this Climate from thirty to fifty (when the Subjects will correſpond pretty well with the καθεστηκοτες of HIPPOCRATES) the natural Diſeaſe is conſiderably depredatory and fatal; and we may reaſonably expect the *Ratio* of Inoculation within the ſame Term to vary in ſome Proportion. Happy and eaſy are thoſe who have

fortunately paſt thro' a much earlier Infection! We are uncertain from Dr. SCHEUCHZER's Tables, how far beyond the Age of twenty they ventured to inoculate within the firſt eight Years of the Practice. He puts down however 110 inoculated, who were upwards of twenty Years, of whom ninety-one took compleatly, ſix imperfectly, thirteen not at all, and two died, or one in forty-five of thoſe who fairly took. BOYLSTON has ſixty-inoculated, from 20 to 30, of whom ſixty took, two miſſed, and one died. We might, indeed, once for all, have referred our Readers back to the Tables of thoſe Writers, which we have reprinted *figuratim*, to calculate for themſelves; but the Proportion of Deaths and Recoveries from Inoculation conſtituting a very eſſential Part of this Work, ſuch a Recital here may prove the moſt venial Redundance in it.

Were it neceſſary to advance to the later Stages of Life, we have TIMONI's Affirmation, 'that it has been performed on Perſons of all Ages, without any one being found to die of it.' PYLARINI, with more Reſerve and Truth, ſays, 'ſeldom or never has any bad Conſequence happened; tho' it has been performed on all Ages and Temperaments.' The former has certainly not been the Caſe with us in *Europe*, nor in *America*; and indeed it would be unaccountable, if it were: For tho' we may admit People in general on the evident Invaſion of Age, and much more in the Progreſs and Advancement of it (ſuppoſing them tem-

temperate and regular) to be leſs inflammable Subjects than at the Vigour of Life, and to be rather phlegmatic than bilious: yet we muſt be ſenſible the Circulation is now feebler; the Rigidity of the Veſſels is increaſed, the Arteries having become bony, in ſome old Perſons; the Teguments are dryer; ſome of the ſmalleſt Capillaries, which in meer Infancy might not be ſufficiently explained or dilated for the Circulation, may at this Age as probably be cancelled or cloſed up; and the Perſpiration conſiderably decreaſed. Now as the former Circumſtances will render variolous Extrication and Eruption very difficult; ſo the laſt will occaſion a foul and recrementitious Blood, which might otherwiſe perplex and confuſe the Diſeaſe, it had no direct Tendency, as a *Pabulum*, to exaſperate. Should the Symptoms run high, ſuch Patients will be in the State of Infants or young Children, with Regard to their Strength, without the advantageous Ignorance of their Danger. They will not be ſo liable, as the ſtrongeſt Patients, to a mortal Struggling with the Operation of the imbibed Venom; tho' probably more ſo, to as fatal a Sinking under it. But ſuppoſing Eruption got tolerably over, we ſhould be leſs ſurprized at a tardy and imperfect Suppuration, at a warty or huſky Pock, or at that Diſpoſition to a Gangrene, to which old Age is, on other Accounts, ſo obnoxious. And beſides theſe Objections to Inoculation at theſe Times of Life, we may obſerve, (which DIEMERBROECK did of the Plague itſelf) that old

People

People are really leſs ſuſceptible of the natural Infection (probably from a Diminution or Dampneſs of the more high and volatile Principles of the Maſs) and that the more advanced have oftener miſſed it by Inoculation, which was early obſerved by Dr. JURIN. We may morally reflect too, that he muſt either have had a very uncommonly uninterrupted Series of earthly Happineſs, who could embrace ſuch an Infection after forty-five or upwards, for a contingent Prolongation of his Life, through an Immunity from one Diſtemper: or that he muſt be affected with an exceſſive Dread at his inevitable Subjection to Death, who could be ſo deeply ſolicitous about a little Remainder of the Day, when Evening admoniſhed him of the neceſſary Approach of Night. Neither might ſuch a Patient, after a ſevere Small Pocks (which he has rather Reaſon to expect, even from Inoculation) be able to emerge ſo compleatly thro' all its impairing and morbid Conſequences, as one in any of the former Stages of Life. In *Great Britain* or *Ireland* I have not heard they inoculated Perſons advanced in Life, and of Courſe not the aged. Mr. RANBY, to the beſt of my Recollection, informed me, he inoculated none above two or three and thirty. About ſix Years ago, I inoculated a * Gentleman of 34, and

* It ſeems pretty certain this worthy Pair had been poiſoned in *Carolina*; the Gentleman, with many other Symptoms, having been rendered bald by it: the Lady, afflicted with a ſymptomatic Cholic and Jaundice, having loſt an extraordinary fine Complexion. They both recovered on taking the uſual Antidote of broad leaved

and his Wife of 30, who went through a benign Diſtemper with great Eaſe and Chearfulneſs. I have ſince inoculated five of their Children and Nephews (and GOD be praiſed for the whole!) with equal Succeſs. In *New England* it has been done from fifty to ſixty-ſeven: Women pregnant, and ſoon after Delivery, Grandſires and Grandmothers have been inoculated with their Poſterity: and if there had been any Beldames who deſired it, they might probably have found an Operator. Of forty-two, who took by Inoculation at *Boſton*, out of forty-four, from 30 to 40, one died. Of ſeven, who took out of eight inoculated, from forty to fifty, none. It ſeems leſs ſurprizing that two died out of ſeven inoculated there from fifty to ſixty, than that only one died out of as many inoculated, from ſixty to ſixty-ſeven. Such Temerity muſt have juſtly ſubjected its Authors to that Cenſure of HORACE,

—— *dum vitant vitia, in contraria currunt.*

Thus much, and perhaps but too prolixly, on the Advantages and Diſadvantages of the different Seaſons of Life, for the Small Pocks. But as it was our initial Purpoſe to leave nothing very material on this intereſting Subject for any future Compiler, 'till a much larger Experience of the Practice ſhall render it expedient, we are the leſs concerned for any ſuch Redundance, as may have

leaved Plantaine and white Hoarhound, after uſing many other Medicines without Relief, from an Averſion to diſtruſt Slaves they had treated with continual Humanity and Kindneſs. His Baldneſs was entirely removed; but her Complexion never recovered its former Luſtre and Delicacy.

have a Chance of being once uſeful. We proceed then to conſider the different Seaſons of the Year in the ſame Relation.

It can ſcarcely be neceſſary to premiſe, that the Seaſons have an obvious Relation to Climate; or that the Summers of *Conſtantinople*, which lies in about 41 N. Latitude, or thoſe of *Charles Town*, which lies in near 33, muſt not only be greatly hotter, but commence earlier and conclude later than a *Britiſh* Summer. TIMONI ſays, 'this Operation is performed either in the Beginning of Winter, or in the Spring.' Yet PYLARINI tells us, 'the *Greek* Operatrix never performed it but in Winter, tho' he takes the Spring alſo to be proper.' The middle of September is ſeldom unſeaſonable here, but the inoculating Hoſpital, I think, rarely operates before October. Some have thought the very cold and rigid Months might be unfavourable for it; yet we find Dr. NETTLETON, whoſe Patients very generally ſucceeded, inoculated in December, January, *&c.* Dr. FULLER's were in April. BOYLSTON begun to inoculate in *New England* the latter End of June 1721, when it muſt be pretty hot in the Latitude of forty-two, and continued it to the following May, before which he muſt have experienced it in the Severity of their rigid Winters at *Boſton*. The great Numbers inoculated in *South Carolina* in 1738 were in their raging Summer Months; but this was a Matter of utter Neceſſity. The 300 recorded by Dr. MEAD to have been inoculated in St. *Chriſtopher*'s, in the Latitude

Latitude of about 17, must consequently have been infected in hot Weather. These last are all affirmed to have done well: and indeed from this general cursory View we may well infer, that the great Advantage of Inoculation in all Times and Places looks, as if Providence intended it for an universal Relief and Obviation of the natural Malady, whenever, and wherever, it raged. Nevertheless, as the State and Temperature of the Air, that Fluid we incessantly imbibe, will very probably have some Effect on these Occasions: and as we are supposed to select every availing Circumstance for communicating the Small Pocks, let us reflect a little, what Influence different Seasons may reasonably be supposed to have on it.

Were we to imagine a considerable Resemblance between the Seasons, the Climate, of antient *Greece* and our own, (which we cannot strictly do) and listen to what the venerable *Coan* briefly says of the former, we must conclude the Spring a very proper Season for infusing the Disease, as he terms it the (a) most healthy one, and particularly for Children and young People. (b) And indeed we may be sensible that our Springs, upon the whole, differ but little, in their general Healthfulness, from the *Grecian*. The cutaneous Discharge, which the Cold had restrained, is now augmenting; the Circulation through the superficial small Vessels is more free; the Blood

(a) Ἡρ ὃ ὑγιεινόταλον καὶ ἥκιστα θανατῶδες. L. 3. Aph. 9.

(b) Τὰ μὲν ἦρος καὶ ἀκρὰ τὰ θέρεος, οἱ παῖδες, καὶ οἱ τετεῶν ἐχόμενοι τῇσιν ἡλικίῃσιν ἀρίστα διάγουσι, καὶ ὑγιαίνουσι μάλιστα. L. 3. Aph. 18.

is probably of a kindly Fluidity and Temperament for this Diſeaſe, and the Teguments in no bad Diſpoſition; eſpecially if we ſuppoſe a ſettled Spring; and rather blandly tepid than raw or nipping; tho' in ſome Habits and Circumſtances the latter Temperature may not interdict it. The very Aſpect of the Seaſon, and the benign light Exhalations from the teeming Earth, may conduce to Health, and increaſe the nervous Influence and Secretion; as I have ſometimes imagined all very delightful Proſpects, all entertaining Employment, and innocent rational Pleaſures do. The Poets and Naturaliſts of all Climates, that enjoy a very diſtinct Spring, have not been wanting in their Eulogies of the Salubrity and Pleaſure of this Morning of the Year, as we may term it. There is no præternatural Fervour as yet imbibed from the Summer's Heat; the Bile is not greatly augmented, nor turgeſcent; there is little Tendency to Putrefaction; nor are the Solids as denſe and reſiſting as in ſevere Winters. Undoubtedly, on the whole, the Spring is far from being improper for Inoculation. The Hoſpital appointed ſolely for it ordinarily receives Subjects the latter End of March, and early in April. Beſides, ſhould the Patients be viſited with a greater Eruption or higher Symptoms than uſually attend it, the mild Advances of our pleaſant Summer ſucceed very opportunely to air, to recreate and recruit them.

Yet as nothing below is perfect and unmixed, we muſt obſerve, that this Seaſon, like the reſt, has

has its Propenſity to the Production of particular Diſorders. In enumerating thoſe peculiar to the Spring, HIPPOCRATES (a) ſpecifies very many of the cutaneous Diſorders of his Country-men, which are more than we have meer *Engliſh* Names for, a ſufficient Proof of their not being ſo familiar to this Climate; whoſe Spring muſt be more temperate than theirs, which probably riſes to the Heat of our ordinary Summers. It muſt be acknowleged however, that ſuch Eruptions as happen here without a Fever, occur more frequently in the Spring than at other Seaſons. Now whether this is ſolely owing to the Attenuation and Expulſion of any acrid and noxious Particles, which the Winter's Cold had locked up in the Maſs; and which may be particularly accumulated in that Seaſon, from our ſmaller Proportion of vegetable Food then, and a more than uſual Quantity of baked and high ſeaſoned Meats: or whether it depends only on a greater Expanſion of the Blood, and Relaxation of the Teguments, by the returning Warmth, it proves the Diſpoſition of this Seaſon to eruptive Diſeaſes; that is, to ſuch as depend on a more diffuſive Motion from the Centre to the Superficies, with a groſſer Excretion there. This will give us but little Apprehenſion of internal Eruption then, if we may be allowed the Expreſſion, which muſt be defenſible, as the *Viſcera* have their exterior Surface too. But the Queſtion here is, Whether, from the preſent Tendency

(a) L. 3. Aph. 20.

of various Eruptions to the Surface of the Body, a more copious and leſs ſimple Eruption may not occur in the Small Pocks, more particularly in the Spring? A late chirurgical Writer on Inoculation is fond of ſuppoſing a particular Malignity in the Small Pocks at this Seaſon: and it is not improbable that when all the Fluids in our Hemiſphere are rarefied and excited, in order to vegetable Generation, our vital Fluids may become gradually more diſpoſed to a Motion very analogous to Fermentation. But we ſhould not omit to add here, that this gradual Attenuation of the Maſs, and its more free Diffuſion is in general manifeſtly benign and ſalutary, diſpoſing many Animals to a Renovation of their Kind, with that of their Food. Beſides the Matter of thoſe little Eruptions that occur at this Seaſon, and chiefly in Children, can have no conſiderable Malignity, as it occaſioned little febrile Commotion or ſenſible Complaint by its Commixture with the Blood before its actual Eruption; which having a Tendency to depurate the Maſs, poſſibly even a judicious Uſe might be made of it, previous to Inoculation. Serjeant RANBY has told me, that ſlight Eruptions on the Face or Body never deterred him from inoculating; nor did he ever experience any Aggravation of the enſuing Diſeaſe from them: and upon the whole we think it very clear, that the Advantages of this Seaſon for the Operation ſenſibly out-weigh its Inconveniences, which abundant Experience has verified: and with which, a malignant Spe-

cies

cies of the Small Pocks for two or three Springs, if it could be proved, inſtead of being mentioned, would not equiponderate.

Summer ſeems unanimouſly rejected for this Operation by all Writers, and certainly, in the main, with great Juſtice; ſince the ſame Intemperature, moſt generally obſerved to contribute to the Violence of the natural Diſeaſe, muſt have an obvious Tendency to raiſe the Symptoms of that, which is excited by a different Application of the ſame contagious Cauſe, and which is ſo genuine, tho' a very ſoft Reſemblance of it in Miniature. Every medical Perſon, who has endured the Fervours of Summers equal to the *Grecian*, muſt have ſeen, in their burning, their bilious Fevers, their *Choleras*, and their bloody Fluxes, too many mortal Exemplifications of the καυσοι, ἐμεσοι, διαῤῥοιαι, which HIPPOCRATES (1) conſiders as the moſt uſual Diſeaſes of this Seaſon: his ἱδρωα alſo correſponding very cloſely to their prickly Heat. HEURNIUS, who lived in *Holland*, aſſerts, on this Aphoriſm, (a) "that Summer produces a great Acridity of the Bile." His Expreſſion is rather ſtronger, ſignifying its Procreation of the moſt acrid. BOERHAAVE alſo tells us, (2) "that Summer, and whatever increaſes the Velocity of the Blood, wonderfully encreaſes and exalts bilious acrid Salts;" and, in talking of the Small Pocks, he terms them, in the

(1) L. 3. Aph. 21. (a) Aeſtas acerrimae bilis procreatrix eſt. —— In locum modò citatum.

(2) De medicam. Oper.

the Height of a *Dutch* Summer, *periculoſiſſimae*, moſt highly dangerous. In Fact the nine who died, out of 900 inoculated in *Carolina*, all died in their very hot Summer Months. In *Britain* we hear very little of its being enterprized at this Term. The celebrated *Sydenham*'s Remarks on the natural Diſeaſe, and thoſe of many other eminent Writers, all tend to the ſame Purpoſe. Neither muſt we omit ſo material an Argument againſt it, as that of this Seaſon's particular Tendency to promote Putrefaction; to which it may be added, that Summer, in ſome Conſtitutions, may require a pretty accurate Preparation, for which it is not the beſt Time.

But having rendered this juſt Deference to theſe Facts, Arguments and Authorities, let us not be partially unattentive, to Facts at leaſt, on the other Hand. Of twenty-two which BOYLSTON inoculated at *Boſton*, between June twenty-ſixth and Auguſt thirtieth, one died, who was inoculated the laſt Day. If it be conſidered, that but one died out of each hundred inoculated in *Carolina*, all indeed in June, July, and Auguſt, when I have obſerved the natural Diſtemper, at the very leaſt, carried off every fifth Patient; and if we admit the raging Heat of thoſe Months there to be, as it very probably was, a moſt aggravating Circumſtance, it muſt have demonſtrated the great comparative Security of Inoculation, even in Summer there. The 300 Negroes inoculated in St. *Chriſtopher*'s, under an inceſſant Summer, cannot well be urged as an

Objection

Objection to it then; tho' perhaps as they were all *Africans* or their Deſcendants, the Heat was not ſo deterring a Circumſtance in them, as it might be in Whites or Europeans. Indeed were it not for ſuch Succeſs in ſuch Climates, all thoſe very near, and within, the *Tropics*, where its Relief is likely to be very neceſſary, would be debarred the Uſe of it: and as this violent Diſeaſe was not improbably at firſt an endemic or a Native of *Africa*, it were hard to ſuppoſe, that Providence had rendered it, from that Privation of Cold, which its Name imports, incapable of the greateſt Security from the mortal Degrees of it. Theſe Conſiderations will at leaſt hint, that our Summer may not be the moſt improper Seaſon for inoculating *Africans* here; the natural *Craſis* of whoſe Fluids undoubtedly better adapts them to bear, and even to thrive in Heat, than ours; eſpecially if their Colour abſorbs Heat, as it has been ſuppoſed to do Light. And poſſibly if any Perſon of our own Complexion, of a moiſt or phlegmatic Conſtitution, and approaching the Winter of Life, was determined to be inoculated, he might prove ſuch a reaſonable Exception to the general Diſadvantage of our Summer for the Operation, as to render it judiciouſly preferable; eſpecially if it was, in general, his moſt healthy Time. Neither is this Seaſon altogether void of ſome favourable Circumſtances for this Diſtemper, ſuch as the increaſed Perſpiration, and laxer State of the Teguments in it: to which it may be added,

that

that not a few of our *Engliſh* Summers have been too moderate for the compleat Maturation and Sapour of our Fruits: and that in certain Fact the natural Diſeaſe has been, not very ſeldom, found more benign at this Seaſon than in ſome Winters with us. Yet as our cooleſt Summers muſt have a leſs ſimple, and leſs elaſtic Air, from ſome Exhalations, its Inconveniences will generally preponderate; and it muſt be particularly pernicious to bilious, hot and dry Temperaments, to contract the Small Pocks in it. The Summer then, even our own, ſeems juſtly to be rejected, in moſt Caſes and general Situations, for the Operation: though, where the natural Diſeaſe was very epidemic, and unuſually fatal then, ſuch reflecting Subjects of it, as could not retreat from the Scene of Infection, will not form to themſelves the leaſt cogent Arguments, for admitting, at ſo perilous a Juncture, the leaſt perilous Mode of it. The Conſequence from a *Carolina* Summer is no bad Precedent. Neither muſt we omit here, that the Climates and Summers, Strangers have been habituated to, may well deſerve our Conſideration on this Head. Thus ſeveral Children from *South Carolina* have been very ſucceſsfully inoculated here in May. I inoculated one as late as June the 1ſt N. S. or May the 20th O. S. whom indeed I ſuppoſed and found a very mild Subject for the Diſtemper. I inoculated a Gentleman from *Carolina* of about 22, June 14, 1759: and another of 23, from *Bermudas*, the 28th of the ſame Month, who both

both did entirely well; the laſt having them very lightly indeed for his Time of Life. I ſhould have been leſs diſpoſed to it at that Seaſon on Natives here.

The *Italian* Phyſicians, who obliged us with the earlieſt Informations of this Practice, are as ſilent about the Uſe of it in Autumn, as in Summer; tho' its Prohibition is ſufficiently implied in one's confining it, with the *Greek* Woman, entirely to the Winter, and the others limiting it to Winter and Spring. The Summers at *Conſtantinople* being much hotter and more extended than our own; from the great Attrition and Expence of their Humours then, it muſt follow, that their Autumns, which cannot greatly differ from the (a) *Hippocratic*, muſt be ſicklier than the *Britiſh*. And it happens indeed pretty conſtantly, that the Inhabitants of *Carolina* are more healthy during the equable, tho' ſevere, Heats of their three violent Summer Months, than upon their ſenſible Abatement. For if the (b) Changes of the Seaſons, as that great Obſerver notes, are a principal Source of Diſeaſes, it muſt conſiderably depend on their varying the Excretions, particularly that important one of Perſpiration, which is certainly much greater at *Conſtantinople* than here; and conſequently ſubject to a greater, that is, a more ſickly, Variation. But if we ſup-

(a) Ἐν Φθινοπωρῳ ὀξύτατα αἱ νοσοι, καὶ θανατωδέστατα, ὡς ἁπαν. L. 3. Aph. 9.

(b) Αἱ μεταβολαι τῶν ὡρεων μαλιστα τικτουσι νοσηματα. L. 3. Aph. 1.

poſe Autumn to commence here rather before the middle of September, according to our lately rectified Style, Experience has convinced us it is a very proper Seaſon for Inoculation, notwithſtanding its being unhealthy for many addicted to chronically periodical Diſeaſes. An eminent Phyſician, whom I had Occaſion to converſe with on this Diſeaſe, ſaid, he imagined the Fall a good Seaſon for the Operation, from our Humours having been previouſly cooled and diluted by the Summer Fruits. This appears not unreaſonable; and we may gratefully obſerve, by the Way, the abundant Goodneſs of the omnipotent Phyſician, in preſenting us, at that Noon of the Year, with Plenty and Variety of ſuch Regales as attemper the Blood, and correct the Bile in its moſt turgeſcent State; and in ſhowering down a Profuſion of the moſt acid and cooling Fruits, where it abounds moſt, and where there is the greateſt Tendency to Putrefaction from Heat. As the Operation here is almoſt wholly confined to Spring and Fall, its few Miſcarriages muſt have occurred at theſe Seaſons; and they may, without any material Error, be equally divided between them. After the firſt Patient BOYLSTON loſt, which was in Auguſt, none of the other five died, 'till very late in November, when their Winter, in *New England*, may be reckoned to ſet in.

The firſt Inoculators ſelected Winter ſolely for the Operation, and if we conſider the Climate and Air of *Conſtantinople*, that Seaſon, when they are generally

generally the moſt free from peſtilential Diſeaſes, promiſes to conſtitute the beſt Temperature for it there. But the Queſtion is, Whether it is ſo in our own, or in ſtill more northern Regions, where the Cold is very rigid, and ſometimes extreme? The moſt favourable Quality of Cold, with Regard to this Diſeaſe, ſeems to be its Oppoſition to that Putridity of the Humours, which often attends the ſevereſt Degrees of it: its moſt unfavourable one is, that it is apt to render the Veſſels, Ducts and Teguments too rigid, and the Blood itſelf, perhaps, too compact; from which laſt Circumſtance a greater internal Conflict and Fever may enſue, as a more difficult Eruption may reſult from the firſt. And tho' a very gradual Eruption, after Infection, would be deſirable, where we had Reaſon to ſuppoſe it the Effect of a very moderate Aſſimilation: yet if the Humours, when conſiderably variolated, are retained much beyond the ordinary Term of a ſalutary Eruption, by a Straitneſs or Rigidity of the Canals, thro' which they ſhould be wafted to the Surface, a Tranſlation of it may be determined on ſome internal and leſs reſiſting Part. But here it is obvious that Inoculation, which takes off the Reſiſtance of the inoculated Limb or Limbs, and makes their Ulcers attractive of that Poiſon whoſe Seeds were infuſed through them, has a great Advantage of the natural Diſeaſe in this as well as other Seaſons. With Regard to our own Winters it muſt be acknowleged, that for ſeveral late ones more have died of

the natural Diſeaſe than in the preceding or ſubſequent Summers. Whether this may be aſcribed to a greater Number of Perſons (among whom are many freſh Subjects for it) reſiding in *London* during Winter; whether the Check of Perſpiration, the more foggy and ſulphurous Air, ſome Alteration of Diet during the Seaſon, or whatever elſe may cauſe, or conduce to it, our Bills have demonſtrated the Fact abundantly. If ſuch a remarkable Mortality, repeated again in the ſame Seaſon, ſhould induce People to be inoculated in it (as a great Mortality muſt be a very natural Inducement) we muſt grant that it will be more practicable to defend a proper Chamber from all ſevere Cold, than it will be to render the Air of one, in a very ſultry Summer, conſiderably cooler than the contiguous Parts of the Atmoſphere. I ſhould think extreme cold Weather improper for the Operation in many Bodies, and particularly in tenſe and rigid Subjects, and ſuch as ſweated with Difficulty. It might ſucceed better with the very bilious, and with thoſe full ſoft Habits, in which we might apprehend ſome putrid and colliquative Symptoms, from a Summer Infection.

But after this Conſideration of the Seaſons, with Reſpect to this Practice, we muſt remark, that in whichſoever of them, under whatſoever Climate, the natural Diſtemper ſhall rage with the higheſt Symptoms and greateſt Mortality; thoſe inoculated then and there may expect to be affected in ſome Proportion to its Violence at that Time.

Time. For the Conſtitution of the Air then being ſuch, as either co-operates with the external Cauſe of the Diſeaſe, when received into the Blood; or previouſly diſpoſes the Humours, before Infection, into the worſt State and *Craſis* for the Reception of it; or perhaps acteth thus ſeverely, both before and after Infection; the inoculated, who breath the ſame common Air, and have taken in the ſame Cauſe, muſt, by a neceſſary Conſequence, partake of the combined Effects of both. We have no Doubt however, but that even in this unhappy Situation, the Practice will be approved in its Conſequences by a very favourable and diſtinguiſhing *Ratio* from the Deformity and Mortality occaſioned by the natural Diſeaſe: provided that accidental Infection has been effectually avoided (which may ſometimes be very difficult to avoid in a variolous part of the Atmoſphere) and the Subjects of it have been ſeaſonably and judiciouſly prepared for it. We confeſs at the ſame time, that if they could ſecurely retire (and eſpecially thoſe of the moſt ſuſpected Habits) beyond the Contact and Influence of ſuch a Contagion and Epidemy, it would be much preferable to Inoculation at ſuch a Juncture. This Occaſion may alſo inſtruct us, how advantagious it muſt be for the Subjects of this Diſeaſe, and eſpecially for the worſt of them, to be inoculated, when the natural Diſeaſe is of ſo benign a Character, as not to kill above * one in forty-five or fifty; or, as ſome have ſaid, if we could but believe them, one in a hundred; at what-

*. See P. 135.

whatever Seaſon of the Year this very happy Conſtitution of the Air ſhould occur. Under ſuch Circumſtances perhaps we ought not to deſpair of the Accompliſhment of Mr. La Condamine's Prediction ——— That not one of the inoculated would die.

We ſhall endeavour to be the more conciſe on the moſt and leaſt favourable Complexions and Temperaments for this Diſeaſe (the former being ſuppoſed conſiderably indicative of the latter) ſince much of this has been occaſionally inſinuated and interſperſed in ſome of the former Sections. Beſides which, the Temperaments, or the Humours, which greatly conſtitute them, have no inſignificant Relation to the different Stages of Life, and Seaſons of the Year, which have been already conſidered. Thus meer Children compared, not with each other, but with the Generality of thoſe at other Stages, are rarely bilious; meer Youth is rarely phlegmatic, or old Age very ſanguine. And thus, in the Spring, the roſy Blood ſeems gently expanded; in Summer the Bile abounds, and in Autumn and Winter Phlegm and Rheum. But when we come to conſider Individuals, abſtracted from the different Stages of Life, and Seaſons of the Year, undoubtedly thoſe in the ſame Stage differ, and even in the ſame Seaſon, greatly, in Temperament. I have imagined, in general, that the Complexions which exhibited a ſoft damaſk-like Roſineſs in the Countenance, with a mild, unardent Vividneſs of the Eyes and Aſpect, were the moſt happily

pily diſpoſed for this Diſeaſe. This ſeems to promiſe a full Proportion of a fine, ſimple Lymph, for a favourable Dilution of the inflammable red Globules. Some Drops of a rich, bright, crimſon Tincture, inſtilled into a Quantity of pure, tranſparent, elemental Water, that might not affect the tinging Body by any mineral, or metallic Addition, may give us ſome Idea of ſuch an Appearance; however ſhort of the inimitably mild and corrected Glow, which animating Nature ſoftly diffuſes, in this temperate Climate, over the Countenance of many of the gentler Sex. It ſhould ſeem, in theſe fine Originals, as if the Bile were perfectly ſecreted by its proper Organs; the *Rete mucoſum* nearly colourleſs, and its Envelopements again delicate, ſmooth and clear. And yet I have been convinced, that an Exception may occur to the entire Succeſs of this happieſt Complexion for the Small Pocks, in the ſecond Daughter of the late brave and worthy Sir PETER WARREN; which young Lady, under this very promiſing Appearance, and at about the Age of ſix, took a ſevere Quantity of it, from which ſhe recovered, not without Difficulty; and which left too many Traces of its Triumphs behind it. But we muſt not omit, that ſhe had heated herſelf greatly in *Kenſington* Gardens before Seizure; and was ſurprized by the Sight of one newly recovered from the Diſeaſe: under which aggravating Circumſtances, a Perſon of a leſs happy Complexion for the Small Pocks, muſt, I apprehend, have certainly died. Miſs WARREN,

(ſince

(ſince the Honourable Mrs. FITZROY) who has that Complexion we have attempted to deſcribe, had before been inoculated by Serjeant HAWKINS, and has ſcarcely a perceivable Trace of the Diſeaſe.

Thoſe who have Fluſh enough to be termed ruddy or ſanguine, if not too deep, and moderately clear, frequently ſucceed well when young, in the natural Way; notwithſtanding they generally aſſimilate more than the former, as it is not unuſual to ſee conſiderable Traces of this Diſeaſe in wholeſome ruddy Faces. But the Time of Life when ſuch were ſeized, the Climate and Seaſon of the Year, their Way of Living and Exerciſe, juſt previous to Contagion, and the Denſity of their Teguments, which muſt be eroded through by the Puſtules, are to be conſidered in the Eſtimate. Such, however, generally come off very well by Inoculation. Great Care ſhould be taken not to heat their Blood any Way previous to it. About the Time of ſickening, if not advanced in adult Life, they are generally inclinable to Hæmorrhages from the Noſe, which have much oftener a good Effect than the contrary: nevertheleſs it ſufficiently contra-indicates the Uſe of Poſſet Drinks, or Milk, even tho' diluted.

But where the Redneſs ſhould be ſo intenſe, as to incline towards a Shade of Purple in the Face; and to protrude in rough Pimples and a ſort of Excreſcences (which occur oftenеſt in adult intemperate Perſons) we ſhould apprehend

a ſevere Diſeaſe. Their Blood is manifeſtly pregnant with rich and ſulphureous Parts, and ſuch aſcending much more into the Face, than they appear on the Trunk or Extremities, apparently depends on much the ſame Cauſe* with the Eruption of the earlieſt and moſt corroding Puſtules there.

The bilious Temperament, that betrays itſelf in a Yellowneſs of the Face and Teguments, and an unclear White of the Eye, threatens a very bad Diſpoſition for it. And tho' the *Atra Bilis* of the Antients, and of ſome antient Moderns, affords me no preciſe Idea; yet where I have obſerved this Colour ſtill more brown and intenſe (ſuppoſing the Effects of Climate and Inſolation out of the Queſtion) with a certain concomitant Heavineſs of Aſpect, a dry Habit, and harſh Voice, I have dreaded even the Inoculation of the Subject; and would have all, ſo unhappily conſtituted for it, to retire, if poſſible, beyond the Activity of Infection, or their own Attraction of it. The Pale, if clear, may be conſidered, in ſome Reſpect, as contraſted to the Bilious; and where this Paleneſs is not morbid, but natural, and as it were hereditary, and may reaſonably be ſuppoſed to depend on ſuch a mild and copious Humidity of the Conſtitution (from a ſmaller Proportion of the red Globules) as is often accompanied with a ſupple Fibre, they may not be very unpromiſing Subjects for the Diſeaſe, and are ſometimes more diſpoſed to ſlow and nervous, than very inflammatory, Symptoms.

* See P. 190.

But where the Paleneſs was indicative of a Cacochymy or Leucophlegmacy, and tinged the Countenance with a Shade of the *Chloroſis*, tho' that Diſtemper did not exiſt, we may be likely to experience a perverſe Diſeaſe. For tho' we do not conſider the Lymph in this State, nor even the Phlegm, which may be an Incraſſation of it, as the proper Neſt, or Harbinger of the Small Pocks; yet, as it is morbid, there may be ſome Doubt, whether, as morbid, it might not exaſperate the Diſeaſe, which it will very probably perplex. And this may be the Caſe of many of thoſe pale Complexions we obſerve often ſeverely pitted after the Small Pocks.

But here I would not be underſtood to ſuppoſe, there may not be ſundry Exceptions to each of theſe general Obſervations on the Happineſs and Unhappineſs of different Complexions, with Regard to this Diſeaſe. I have ſeen a few to each; and others may have ſeen more. It ſeems ſufficient however, that ſuch Obſervations will prove much oftener true than erroneous. I have known a naturally bilious Caſt of the Countenance joined to thin, ſmooth, and delicate Teguments, which, from the happy Iſſue of Inoculation in them, I imagined might, in ſome Degree, have compenſated for the bilious Temperament. This, among others, was the State of the COUNT of GISORS: and thus may the other Complexions alſo be excepted, and qualified, either for the better or worſe. The various and even oppoſite Qualifications of different Bodies for this Diſeaſe

will

will be ſo combined in particular Subjects; and our utmoſt Inveſtigation of the Eſſence of this Contagion, and of its inborn correſponding Nouriſhment in the Conſtitution, are ſo imperfect, from the Bounds which Nature hath ſet to our Enquiries into all ſuch Parts of Matter as are not analytically examinable by our Senſes; that no conſiderate Perſon will be ſurprized at the Fallibility of our Notions concerning them. Nevertheleſs as a rational Conjecture, or even lucky Imagination, may ſometimes ſupply the Abſence of Sagacity or Penetration, I have really been ſeldom miſtaken in my previous Opinion of thoſe Subjects of Inoculation, who proved to have but few Puſtules, and light Symptoms; having been oftener agreeably diſappointed by exciting a more gentle Diſeaſe than I apprehended. In the very worſt Subjects however for this Diſeaſe, where Miſtakes are not eaſily incurred, mine have been very few; and I have generally apprized their Friends of the Pain, the conſiderable Inflammation and Struggle we muſt look for, under the moſt advantageous Applications of this Practice in my Power. I have ventured alſo to let the moſt reaſonable and courageous Subjects of it know, they were to expect a conſiderable Soreneſs for a few Days. And I have ſeen many *ſuch* Subjects of this Practice emerge from a pretty ſharp, tho' regular Diſtemper, moſt of whom I ſincerely think muſt have ſunk under an accidental Infection; which Infection is ſometimes not a little aggravated, by its ſeizing many Subjects of this

Diſeaſe, of whatever Complexion or Temperament, immediately after violent Exerciſe and Fatigue, or after exceſſive Intemperance, from which unhappy Circumſtances thoſe who are properly inoculated are ſure to be exempted.

We ſhall conclude this long Section by enquiring, what different morbid Diſpoſitions ſhould more or leſs diſcourage us from the Practice of Inoculation on Perſons affected by, or propenſe to, them: an Enquiry we ſhould probably have declined, had there not been a few Inſtances of People who have been permitted, and even incouraged, to ſubmit to Inoculation, for other Purpoſes, than that of introducing the Diſeaſe gently; which we cannot avoid condemning very generally, and which did not take its Riſe in *Europe*. But after a hearty Averment of our Opinion, that the diſeaſed, the very infirm and valetudinary, as ſuch, are improper Subjects for this Operation, it will be but impartial to diſtinguiſh, that ſome particular Indiſpoſitions are more ſtrongly interdictive of it than others. We have never heard, and cannot ſuppoſe, any have been abſurd enough to recommend this Infection for a Remedy againſt any acute, contagious, or febrile Diſorder; but rather for the Removal or Mitigation of ſome chronical or periodical Complaint. The Scrophulous then, if of a very hot Intemperies (for we may find them oppoſitely * circumſtanced) are very indifferent Subjects for the natural Diſeaſe, and prove difficult, in Proportion, for Inoculation; tho' having emerged,

* See P. 272.

I have really ſeen a ſenſible Improvement of their Conſtitutions. Of both this Difficulty and this Improvement I had a Conviction in the Caſe of a Youth, from *America*, about ſeven Years paſt: and whom, to my Reproach I confeſs, I did not apprehend to have been ſuch a Subject, 'till in his Decumbiture from Inoculation; as the young Gentleman appeared very hearty, and free from any glandular Foulneſs, after a Reſidence of ſeveral Months in *London* (where it appeared his Health had greatly improved) whence I concluded he had been recommended, merely for Education, to the Care of a worthy and eminent Merchant here. This Gentleman however has ſince informed me, that upon the Youth's Embarkation from *Carolina*, he was ſo extremely ill and low, that his Friends never expected to hear of his living Arrival in *England*. The Youth himſelf aſſured me, in his Confinement, he had been given over more than once by Practitioners abroad; and was once actually laid out for dead: that he was ſick and feveriſh generally ſix Months in the Year; and at other Times had running Ears, and Breakings-out; ſcarcely ever ſweating (tho' naturally very active when not ill) throughout their fervent Summers, when very great Heat muſt be imbibed; and from whence the Inaction of the exhaling Veſſels is likely to be an extreme morbific Circumſtance. But without any previous Information of his bad Situation there, he was purged here three or four Times, tho' without the leaſt Regard to a ſcrophulous or hectic Habit;

bit; and gentle Phyſic operated very copiouſly with him. Neither is it ſtrange that he ſhould be eaſily ſtimulated to the inferior Evacuations, where the ſuperficial one was ſo ſmall; his Teguments, for the Age of near fourteen, being uncommonly thick and ſtrong, the Puſtules haing been unable to protrude to the leaſt Prominence in the Soles of his Feet, and but to very little in the Palms of his Hands. His Complexion was very brown. He could not be ſaid to ſicken nevertheleſs before the latter End of the ſeventh Day, when he complained of a very general Itching and Tingling, a frequent Token of copious Aſſimilation. His firſt Eruption was on the eighth, and proceeded to a very full Crop, which, upon the whole, might be called diſtinct, tho' it actually cohered in ſeveral Spots on the Face. Yet I can truly aver, I never ſaw ſo large a Quantity of the Diſeaſe with ſuch mild Symptoms; ſcarcely a Moment's Delirium or Vomiting, and no ſenſible ſecondary Fever, his chief Complaint being great external Soreneſs. He had great Spirits and Patience, for his Load of the Diſeaſe: and after he was up, the ſcrophulous Habitude began to diſcover itſelf in different Boils and Tumours, but chiefly in ſome about the Neck and parotid Glands. But they all healed ſoon after opening and repeated Purging: he ſweats freely now thro' his altered Surface, is hale and lively, and I really think a much fitter Subject for his native Country than when he left it. I very ſeriouſly apprehend he could

ſcarcely

ſcarcely have ſurvived an internal Infection; which muſt have diſpoſed one with ſuch a Stock of morbid and variolous *Pabulum*, and ſuch a Surface, to high internal and inflammatory Symptoms. His only Brother died before at *Briſtol* of the natural Diſeaſe.

But having obſerved above, that the Evil may alſo rage in Perſons of a cold Conſtitution, and a low lax Habit (as it often does) in which Situation it will very rarely, if ever, aggravate the Small Pocks, or be aggravated by it; I am certain I ſhall oblige my Readers by giving them a Hiſtory directly in Proof of it, which the Candour of the worthy and ingenious Dr. HEBERDEN has communicated to me. I ſhall print it exactly with his own Introduction, and his ſubſequent Reflections, which appear truly judicious to myſelf, and bear all the Marks of his accurate Attention and great Experience.

'It ſeems a reaſonable Practice to take ſome care, that at the Time of his receiving the Infection of the Small Pocks, the Perſon ſhould be as free, as may be, from any other Diſtemper; leſt Nature ſhould be hindered in producing, maturating, or rightly diſcharging them; or leſt ſhe ſhould ſink under the Oppreſſion of two Diſtempers at the ſame Time. But it may happen, that the Perſons to be inoculated may have brought into the World with them ſome hereditary Taint, which can never be ſubdued; or they may be ſo circumſtanced, that there may not be Time enough for entirely freeing them from ſome other Diſtemper

temper before the convenient Time of their Inoculation.' Such Perſons muſt receive great Satisfaction from knowing, that it is a leſs formidable Thing, than it is often imagined, to have the Small Pocks ſuperinduced upon another Diſeaſe; or to have them appear upon one in a very ill Habit of Body.'

'A Youth long afflicted with the Evil, after having ſuffered all its crueleſt Ravages, began to be dropſical, as is uſual in the laſt Stage of the Diſeaſe; and in this Condition, in which no one could have expected him to live a Month, he catched the Small Pocks. It proved a moſt favourable Sort, the Eruption of which, the Maturation and the going off were all perfectly regular and kindly, and did not ſeem either to be affected with the other Diſorders, or at all to affect them. He died a little Time after the Small Pocks were entirely over, and ſeemingly not an Hour ſooner for his having had them.'

'The Venom of the Small Pocks is of a peculiar Kind, and it is doubtful, how far it is capable of being joined or heightened by that of any other Diſtemper. Sometimes it is obſerved, that the Diſeaſe, upon which the Small Pocks have happened to be ſuperinduced, remains in a State of Quieſcence all the Time of the Small Pocks. This was often ſeen during a certain epidemical Intermittent, which in many Perſons ceaſed, as ſoon as the Sickneſs of the Small Pocks began, and conſtantly made its Appearance again after the Patients had been properly purged at the End

of

of the Small Pocks; nor was it found that either of theſe Diſeaſes was at all affected by the other; excepting only the Diſappearance of the Intermittent, during the Continuance of the Small Pocks.'

There cannot be the leaſt Doubt, but theſe Facts and Reflections from this juſtly eminent Phyſician muſt impart all the Satisfaction his great Humanity can wiſh, to thoſe employed in this Practice, and to ſuch Subjects of it as may be in the like Situations. I hope too the immediately preceding tho' digreſſive Caſe of my Patient Mr. MACKENZIE, which does Inoculation ſo much Honour, and myſelf ſo little, will be readily pardoned for the Illuſtration it may afford, and the Caution I wiſh it may recommend to others, of not acquieſcing ſo ſuperficially, as I did here, to preſent Appearances. Indeed I have indulged myſelf the more in this Communication, as any ſimilar Acknowlegement, from a Name of Conſequence, might tend to revive a very uſeful old Cuſtom, which ſeems aboliſhed by moſt practical Writers; and which is, that, inſtead of promulging their Succeſſes only, which generally publiſh themſelves; and in which publiſhing every Empiric can fully equal them, they would farther illuminate us with their Miſcarriages and Miſtakes alſo. Now as HIPPOCRATES and SYDENHAM have made, and repeated, the Precedent of atteſting their proper Fallibility, which every Quack deteſts to copy; an Imitation of it may be doubly reconcileable with the Dignity of a Phyſi-

cian, and would entirely comport with that of a Philoſopher. But if the Dread of leſs Fame or Money ſhould deter Gentlemen of extenſive Opportunities in Practice, from obliging Mankind with ſuch valuable *Deſiderata*, during their Lives, a private Memorandum faithfully kept (if that would not coſt too much Time) and annexed to their laſt Wills, might entitle a Multitude of their Survivors to valuable Legacies. — But to return from theſe *ſeria mixta jocis* : —

All eruptive and cutaneous Diſorders, that deſerve the Name of a Diſeaſe, in general ſeem to conſtitute a State improper for this Operation. Thus Dr. JURIN annexes, to the Account of Miſs WALLER's Death, who was inoculated in October 1723, and died the eighteenth from the Operation, the Atteſtation of her Father, that ſhe was leprous. Thus Miſs ACOURT of four Years old, inoculated September 1723, who died the twenty-ſecond from the Inciſions, is atteſted to have been ſubject, in her Infancy, to an Ophthalmy in both Eyes; and, as ſhe advanced, to a Humour that made her raw from Ear to Ear,* which abated on purging and cutting an Iſſue, but ſtill broke out again Spring and Fall. She had ſome of theſe Excoriations three Weeks before the Operation, but her Iſſue was ſuffered to dry by the Nurſe's Neglect, which muſt have been a bad Circumſtance; ſince we may preſume of eruptive Matter, *qua data porta ruet*.

All

* This Caſe appears to have been of a ſcrophulous Nature.

All inflamed or ulcerated *Viſcera* muſt certainly contra-indicate Inoculation; ſince we may too juſtly apprehend an Exaſperation of the inflamed or ulcerated Part from the Diſeaſe. A Jaundice and all Diſorders of the Liver ſhould particularly deter us from it. Miſs ROLT aged between nine and ten, who was inoculated September 1723, and died nine Weeks after it, had a Jaundice of ſix Months Duration the Year before, which appeared again the following Spring, but was cured before the Operation. All inveterate Ulcers, whoſe Obſtinacy is founded on a morbid State of the Humours, indicate the effectual Cure of ſuch a State, before Inoculation. Hot and hectical Habits muſt prove bad Receptacles of this inflammatory *Virus*, while they continue ſuch. The Scorbutic, but particularly if of a hot Temperament, muſt be improper: and all venereal Complaints, if we except a meer Gleet from Relaxation, without Virulence, ſhould be removed previous to Inoculation; the moſt judicious Cure of which may prove no bad Preparation for it, if the Strength has not been too conſiderably depreſſed by the Evacuations. Yet notwithſtanding that extraordinary one by Salivation, Dr. MEAD affirms (1) he has ſeen many in an Hoſpital ſo exhauſted by it for the Great Pox, that they were reduced almoſt to Sceletons, and yet all went very eaſily through the Small. Theſe Inſtances are directly oppoſite to Dr. HAEN's Prediction of the Mortality of the Small Pocks happening after

(1) De Variol. P. 17.

the Uſe of Mercury, which Dr. TYSSOT ſays P. 16. was verifyed by the Event. But of this more particularly in the next Section concerning Preparation.

And indeed if we except the Caſe of inflamed and ulcerated *Viſcera*, it is not improbable, that after ſome of the reſt are removed, and others greatly mitigated, (a judicious Regard being alſo had to the Nature of the Small Pocks) the Perſons lately afflicted by them, eſpecially if they had been naturally well conſtituted for this Diſeaſe, may go through it by Inoculation with a great Proſpect of Security, and poſſibly ſometimes even of Advantage. My private Suggeſtions in this Reſpect have been conſiderably ſtrengthened by a very remarkable Caſe occurring to me in 1758, which I ſhall beg the Readers Indulgence for preſenting to him as briefly, as the complex Nature of it will allow me.

Mr. WILLIAMSON, a very worthy young Gentleman aged about 23 Years and born in *South Carolina*, arrived from thence at *London* in April 1758. He came recommended to my Care for his Health in general (and for Inoculation, if I ſhould think it adviſable) by an eminent Practitioner there, whoſe Patient he had long been; but was ſo very ill and weak when he left that Country, that he has told me, his Friends ſcarcely expected he would live to ſee *Europe*. His Complexion, his whole Surface, and the White of his Eyes were remarkably yellow.

low. He was ſhort breath'd on a little more than ordinary Motion, with a frequent Palpitation of the Heart, a ſhort kecking Cough, Night Sweats, great Langour and general Relaxation. He was impatient of the leaſt Heat, and ſweated under the lighteſt Covering I had ever ſeen any Perſon. He was ſtrongly ſuſpected to have been poiſoned by the Negros in *Carolina*, having often eat at a Family, who were all, or moſt of them all, deſtroyed by Poiſon; and had not a few of the Symptoms. He had been a long Time in this obſtinate Jaundice (for which he had taken many things) joined to a frequent Propenſity to ſpit, not otherwiſe natural to him, with conſiderable Thirſt; a frequent and ſevere Pain in his Back; and all the Appearances of an obſtructed Liver, &c. Within about a Month after his Arrival, tho' the *London* Air ſeemed rather to agree with him, he was ſeized, after a little more Fatigue than uſual, with a greater Fever than ordinary (a ſlow inward one having almoſt conſtantly exiſted) with a greater Cough, and a ſmall ſpitting of Blood. This confined him from ten Days to a Fortnight, having perſuaded him, with ſome Difficulty, to loſe a little Blood; his Strength indeed not admitting of a great deal. Being pretty well recovered of theſe Complaints, I adviſed him to make a Tour into the Country in June, where he continued about five Weeks, and rode frequently about, which, with a few deobſtruent Medicines, ſenſibly improved his general Health. But on his Return to *London*, and changing

changing his Lodging, his Fever and Cough returned in a greater Degree, confining him to his Bed and Chamber above a Fortnight; and then regaining his Plight and Clearneſs, which had improved in the Country, but ſlowly. I had like to have omitted that his *Hypochondria* were tenſe, and his Belly knotty, as it were; that his Urine, which was in a ſufficient Quantity, was very high coloured, and generally let fall, within a very few Hours, the greateſt Quantity of an orange-coloured, and ſometimes of a thick red farinaceous Sediment, that I had ever ſeen; which, to the beſt of my Recollection, he told me, had been the State of it for a full Year before. Nevertheleſs through his own great Regularity and Temperance, and my inceſſant Care (for his Diſpoſition, altogether, was friendly and engaging, and his Character truly eſtimable) with no more Medicine than ſeemed ſtrictly neceſſary, by the latter End of October, moſt of his chronical Symptoms had conſiderably abated, and others diſappeared. His Cough, which had been chiefly in the Night, his Thirſt and Sweats were entirely removed; the Region of the Liver was quite ſoft and equal, the Tumour and Knottineſs of his Belly greatly abated, with a ſenſible, but not a total Improvement, of his Complexion. And now, as further Confinement to avoid natural Infection grew very irkſome, and his Situation ſeemed ſtill very critical, I perſuaded him to take the Opinion of another Phyſician, of very juſt Reputation and Eminence whom I named, as

to

to his Fitneſs for Inoculation, which I imagined might be ſafely undertaken; when that Gentleman told him, 'that tho' he could not be termed a Man in perfect Health, yet, as he continued expoſed here to the Chance of natural Infection, which might be very dangerous for him, he thought it would be adviſable to ſubmit to Inoculation, through which he believed he might ſafely paſs.' In brief he was inoculated November 12, did not ſicken untill the 10th from Inoculation, but then with a ſevere *Lumbago*, which alarmed me the leſs, as it had been habitual to him from his earlieſt Complaints. He had Eruption the 12th, which was preceded and accompanied by ſeveral choleric Stools as yellow as Saffron; and on the 17th had one very large, which the Nurſe deſcribed as very red (tho' without any Blood) and green, or a blewiſh yellow, foaming like Yeaſt, on the Addition of Water, to clean out the Veſſel. However he had in all little more than one hundred Pocks, over a Surface near ſix Feet high. He took little Medicine throughout the Small Pocks (often ſleeping without an Opiate) but he had been obliged to take ſome Variety for his other Diſeaſes before it; beſides Aſſes Milk and *Briſtol* Water, which agreed mighty well with him. He was purged the 22d from Inoculation, and twice more afterwards. The Remains of almoſt all his other Complaints vaniſhed quickly after the Small Pocks: his Complexion become as clear as it had ever been; he could bear ſuch a Quantity of Covering without

out Sweating, as he had not done for many Years. It is remarkable, that all the Blood taken from him before Inoculation, which did not exceed 18 Ounces, taken at 3 or 4 Times, was partly greeniſh on the Surface; and that ſome Blood taken after the Small Pocks was florid. He continued in *London* about nine Months after his Recovery, becoming viſibly healthy and ſtrong; and at his Return to *Carolina*, was not known at firſt by many of his Acquaintance. In ſhort he was much better after the Diſeaſe, than he had been for ſome Years before his Arrival, and ſeemed, abſtracted from his other Diſeaſes, to have been, his Age conſidered, a good Subject for it. His Letter to me, within a Year after his Arrival at *Carolina*, aſſured me of his good Health. I ſubmit this Caſe, which is very faithfully, tho' immethodically, related, to the Reflection of my medical Readers, to determine, if the Small Pocks might not have been even of ſome Service to this Gentleman, as I confeſs I incline to ſuch an Opinion myſelf. — His viſible Difference, before and after it, is known to a Multitude here. —— But to conclude,

The Diſorders that appear not ſo formidable for the Admiſſion of this Practice are ſuch, as depend on an over-moiſt Habit and lax Fibres. Thus it is not inconceivable, that a ſlight recent Catarrh or Defluxion from a little Check of Perſpiration, and ſome cold Defluxions on the Joints (ſuppoſing the *Viſcera* entirely unaffected) might be even diverted, by the Counter-tendency of this

this Diſeaſe to the Surface; and by the augmented Perſpiration it may afterwards contribute to. Incipient *Oedemas*, or moiſt Swellings, of the lower Extremities (ſuppoſing them not the Effects of any Rupture in the Lymphatics, nor one of the laſt Symptoms in ſome fatal chronical Diſorders) but the Reſult of a languid Circulation, a cold and pituitous Maſs, or lax Fibres, might be rather corrected by it. There appears to be a certain Incompatibility in ſome Diſeaſes, which renders it difficult to conceive their poſſible Exiſtence, at the ſame Time, in the ſame Subject. Thus BOERHAAVE, I think, ſomewhere tells us, that if we could introduce a Quartan, we ſhould expel the Gout by it: and perhaps a late Recovery from ſuch a moderate Intermittent as had left no Obſtructions of the *Viſcera* behind it, might conſtitute a Temperament, that would not violently co-operate with the variolous * Infection. I mention this the rather, as I have certainly known Adults paſs thro' the Small Pocks very favourably, ſoon after the former. In brief, the Diſorders from a cold and humid Intemperies would by no Means deter me equally from this Mode of Infection, with thoſe from the oppoſite one. Whence it ſhould ſeem, as if Dr. WILLIS's Obſervation, 'that the va-

 riolous

* Dr. CHALMERS, an eminent Phyſician in *South-Carolina*, informs me in a Letter of *February* 12th, 1761. — "Some who were inoculated during the Couſe of a Tertian, had no Return of it after the Inſition, and were very ſlightly ſick before the Eruption, which conſiſted only of a few Puſtules."

riolous Poiſon does not act on the vital Humours like Yeaſt on fermentable Liquors, by depurating them, but leaves them rather fouler than it found them,' ſhould be limited to a hot Intemperies of the Blood and Habit, and reſtrained from the contrary one; which can ſcarcely ever be increaſed, and has been corrected, by it. We repeat, at the ſame Time, that we are by no Means preſcribing Inoculation to any that may be called ſick or ailing; which we have already cenſured as raſh and injudicious, and ſometimes it ſeems to have been enterprized with equal Ignorance and Perverſeneſs. Nevertheleſs, in a profeſſed Analyſis of the Subject, it might have been judged a material Defect to have omitted the different Habits and Circumſtances, that might more or leſs either diſpoſe us to, or deter us from, the Application of it: and more particularly, as this Part has ſome neceſſary previous Relation to the Preparation of different Conſtitutions for this Diſeaſe, and for the Operation introductive of it, to which Preparation we now directly proceed.

SECTION IX.

Of Preparation previous to Inoculation.

WHATEVER Impropriety there may appear in placing the Preparation for Inoculation ſubſequent to the Operation itſelf, and to ſome other Diſquiſitions concerning it; yet when it is conſidered, that it may be proper, and ſometimes even neceſſary, to demonſtrate to the reflecting Subjects of this Practice its many indiſputable Advantages, and the really trivial Pain, or rather momentary Smart, of making the Inciſions, in order to procure their chearful Conſent to, and even Choice of it; after which Preparation may be ſuppoſed immediately to commence, perhaps the Arrangement of it in this Place may be thought ſufficiently methodical.

Some Perſons have repoſed ſuch an entire Confidence in this Infection, by Inciſion, as to deny the Neceſſity, or even Uſefulneſs, of any Method preparatory to it; whence it may be preſumed ſeveral have been inoculated with little or

none, a great Majority of whom have certainly done well. And indeed, to be impartial, as accidental Infection is generally received unconſciouſly, where we can ſeldom ſuppoſe any preparatory Precaution, there is no Doubt but the meer Circumſtance of admitting the Contagion by one or more Inciſions on the Extremities, inſtead of referring the Manner of its Acceſs to Chance, will be attended with conſiderable Advantages in many Inſtances; ſuppoſing the Inoculated to have ſubmitted to no other Precaution, than that of living temperately, and having carefully avoided natural Infection, which is certainly of the utmoſt Importance. On the other Hand it ſeems but reaſonable to enquire, whether there may not be certain Means of extending theſe Advantages to a ſtill greater Number, and to a more certain Degree of Security, in particular Conſtitutions and Circumſtances. And if the Affirmative of this ſhall appear highly probable, it will be ridiculous to deliberate, whether we ſhould avail ourſelves of this greater Security on ſo intereſting, ſo vital, a Point. Now that different Bodies are differently diſpoſed for the Reception and Iſſue of this Diſeaſe: that the ſame Bodies are variouſly diſpoſed for it at ‖different Times, and under different Circumſtances: that a judicious Exertion of medical Knowlege may remove ſome unpromiſing Appearances for it in different Conſtitutions; and frequently mitigate, at leaſt, very alarming ones, are Propoſitions that muſt appear to

‖ See Mr. *Motte's* Caſe, &c. P. 148 to 151.

to reſolve themſelves affirmatively at once, to every unprejudiced Reflector. Some of the Objectors to Preparation may poſſibly have commenced ſuch, from the ſupercilious and over laboured Formality of ſome Phyſicians in the Regulation of it: and doubtleſs there may have been Errors committed on this Occaſion, both from our dignified Ignorance, and our ſolemn Endeavours to conceal it; which we ſometimes may too effectually do, even from ourſelves. So that where a Subject ſhould require a more exquiſite Preparation than general Temperance and a little opening Phyſic, or Bleeding, from a manifeſt ſanguine *Plethora*, the reſt had better be ſubmitted to the Oeconomy of Nature, than to the Conduct of a Weak Head, of whatever medical Claſs or Appellation. But having admitted this, may it not be ſuggeſted, with equal Probability, that others have ſlighted Preparation, from a Conſciouſneſs, that where a very appropriate one was really neceſſary in particular Caſes and Situations, their Qualifications for it were but moderate?

This I am ſeriouſly afraid has been much too often the Caſe, to the augmented Danger of ſome Subjects of this Practice, the Loſs of a few, and the conſequent Diſcredit of the Practice itſelf. For by what other means could theſe Gentlemen, whoſe uſeful Profeſſion is ſuppoſed to be confined, at leaſt in *London* and other large Cities, to manual Operations and external Healing, procure ſo great a Proportion, not to call it a

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Monopoly, of this Practice, but by positively pronouncing, with their utmost Influence, that the Operation never, or very rarely indeed, required any medical Preparation previous to it; and by asserting also, that it was much oftner prejudicial than not, which an improper and over-laboured one certainly might be. But such a one, it may well be answered, was least likely to happen under the Direction of any good Physician, who had been truly attentive to the Nature of the Small Pocks: And tho' we shall readily admit, that particular Bodies may need no Preparation † at all, not even a dietetic one, and have seen a few such; yet certainly, whether any *Body is such, or is not*, is as truly an Object of medical Consideration, as the Cure of the Small Pocks itself, or of any internal, acute, or chronical Disease, which has never been supposed the Subject of chirurgical Application or Treatment. And though I am far from asserting the Infallibility of the best Physician, and still less my own, on this important Point; and am not disputing the Competence of a very sensible Man, who is a Surgeon, or an Apothecary, but who has thought attentively and extensively on this Disease: yet strictly as *Physician* or *Surgeon*, it is manifest that important Mistakes on this Topic of preparing, in its various Manners, or of omitting Preparation, are much likelier to happen under the Conduct of the last, than of the first. And as this Matter may regard the Ease, the Beauty, or even the Life of the inoculated, the Conduct

† See P. 291, 292.

which

which a reflecting Man muſt embrace for himſelf or his Family in ſuch a Situation is entirely obvious. All this I affirm, I ſpeak from an abſtracted Regard to the Good of the whole Community; and from ſome Reflections on the greater Number of Miſcarriages by Inoculation, that have occurred in the Courſe of the laſt Year.

But to conſider the different Modes of Preparation —— If we recur to the great RHAZES, our firſt Author on this Diſeaſe, for a *Latin* Tranſlation of whom the World is much obliged to the good Offices of the late worthy Dr. MEAD, we ſhall find his Chapter, of Preſervation from the Small Pocks, to imply a very juſt and rational Idea of it; as the greateſt Part of his very cooling preſervative Method would be an excellent Preparation for it, in a hot bilious Temperament, in Summer. TIMONI ſays, 'the Patient to be inoculated is to take Care of his Diet; and that the Cuſtom at *Conſtantinople* is to abſtain entirely from Fleſh and Broth for twenty or twenty-five Days.' PYLARINI informs us, 'the *Grecian* Inoculatrix enjoined a good *Regimen* as to the ſix Non-naturals, eſpecially Diet; for ſhe ſtrictly forbad not only the Uſe of Wine and Meat, but alſo of its Broth for forty Days.' He adds, 'it has very often proved fatal to ſuch Patients, as did not follow this Direction; for new Puſtules have been obſerved to break out, and other dangerous Symptoms to ariſe.' This greater Accuracy, on this important Point, was moſt prudently inculcated by this judicious Phyſician: and we may

ſafely

ſafely affirm, it has been generally obſerved by our moſt rational Conductors of Inoculation in *Europe*. Neither can we heſitate, on the Subject of Preparation, to have a principal Regard to the dietetic one.

The Alterations effected in our Fluids and Solids by our Diet are gradual, and without that Violence to the Conſtitution, which it ſometimes ſuffers from the Operation of very efficacious Medicines. For tho' the Aſſertion may ſeem new, it is certain, that all Things we take internally, which are indigeſtible and unaſſimilable by us, are Poiſons, in ſome Degree; and prove Remedies but by Accident, in Conſequence of their evacuating ſome Humour, correcting ſome improper Conſiſtence of the Blood, or removing ſome Obſtruction, more chronically and importantly morbific than their own Subſtance and Operation, which are ſenſibly ſo for a ſhort Time. This Diſtinction appears reconcileable enough with the Reaſon of that Aphoriſm which ſays, (a) 'If the morbific Humours be evacuated, [ſuppoſing them concocted too] the Patient is relieved, and bears the Evacuation well, otherwiſe not.' Whence Evacuations are generally contra-indicated where there are not ſuch Humours; except a dangerous Plenitude even of good ones, in certain Habits and Circumſtances, ſhould render them precautionary and diſcreet, according to a former

(a) Ἢν οἷα δεῖ καθαιρεῦς καθαίρωνται, ξυμφέρει τε καὶ ἀφέλως φέρουσι τὰ ἐναντία, δυσχερῶς. L. 1. Aph. 25.

former Precept. (b) But as a Body without morbific Humours, abſtracted from this Diſeaſe, and without ſuch a Plenitude, may be of a very ſuſpicious Habit with Regard to the Reception of this Contagion; that a Courſe of ſuch Aliment as is productive of a different Chyle (with a correſponding Difference in its ſubſequent Commixtions, Appoſitions and Secretions) may often commute, or mitigate, ſuch Habit, is reaſonable, and verified by Experience. I can have little Doubt myſelf, but that the general Way of living, in any Country, co-operates with the Climate and Situation to compound, and evidently to mark, what may be called, the national Conſtitution and Temperament; whatever Subdiverſities may obtain in many of their Individuals: tho' I conceive the very ſame kind of Aliment to be elaborated by one Conſtitution, into Blood of a ſomewhat different Temperament and Compoſition, from what it would be in others. Nevertheleſs, as a different and oppoſite Diet would probably occaſion, under the Action of the ſame Organs, a greater Diverſity of the Blood, than what would reſult from a ſtrict Similarity of Diet, under the Action of the like Organs in different Conſtitutions, that Courſe of it, that is anti-inflammatory and will reſtrain Fermentation in one Body, will, tho' probably in different Degrees, do ſo in all; abſtracted from a few Sympathies and Antipathies in Food, which are rare,

(b) Αἱ επ' ακρον ευεξιαι σφαλεραι — τελειον αν ενειλα τω ευξιλω λυσιν ξυμφεραν. L. 1. Aph. 3.

and out of the Queſtion. Could we as exactly foretell any other acute Diſeaſe a Month or ſix Weeks before its inevitable Attack, as we can this, after Inoculation is reſolved upon, I cannot doubt but a Phyſician, well verſed in ſuch Diſeaſe, and in the *Medicina dietetica*, might ſo diſpoſe the Habit and Temperament of a regular Patient, as to give him a better Proſpect of his Recovery, than he could have done without it. And yet we do not ſeem to have as competent a Notion of the inherent Fuel of any acute Diſeaſe, as we may form of this; which indicates ſuch a Diet as may diſpoſe our Fluids to their State in lively active Children; as far as that State may be conſiſtent with a healthful Condition of it, for the Patients Time of Life. In fine the ſagacious HIPPOCRATES has been very accurately attentive to the moſt important Article of Diet. He ſuppoſes an Obſervation of the different Quantity and Quality (a) proper for the Sick (which we endeavour to modify and extend here to thoſe about to be ſuch) to have ſtarted the firſt Hint towards the Diſcovery of the medical Art; and his Directions for it in Fevers are found conſonant to almoſt univerſal Experience at this Day.

Nevertheleſs, tho' we allow this juſt Precedence to dietetical Preparation, as many will need very little more; and young mild Subjects, who

(a) Ἐμοὶ μὲν γὰρ, ὅτες ἐν ἀρχῇ ἦτον, ἐδ' ἂν ζυλῆσαι δοκεῖ ἰητρικὴν ὁδὸν, ἢ ταυτὰ διαιτήματα τοῖσι τε καμνουσιν καὶ τοῖσιν ὑγιαινουσιν ἥρμοζεν. De priſca medicina.

who are preſumed to be generally kept to a temperate, ſimple and fluid Diet, if free from Worms, cuticular Impurities, and otherwiſe healthy, will need none at all: * yet in ſuſpici-

 ous

* It is clear from a late Inſtance, they may even ſuffer by it. Having two Sons of WILLIAM MIDDLETON, Eſq; of *Crowfield Hall* in *Suffolk*, to inoculate laſt Spring, I told the worthy Parents, that the youngeſt, a Child of a very clean Habit, delicate Teguments, and fine Complexion, had no Occaſion for any further Preparation, being kept from Fleſh for ſeveral Weeks before. But Mrs. MIDDLETON's Tenderneſs wiſhing the Child at leaſt one gentle Doſe of Manna, or ſome other opening Phyſick, I directed 2 Drachms and a half of *Manna*, and five Grains of *Magneſia alba* which ſlowly excited three very ſmall Stools, without the leaſt perceivable Sickneſs or Complaint, the ſame Day. Yet on the next (this ſeemingly trifling Evacuation having ſunk his mild Habit and lax Fibre below the Standard of Health) he had a Fever, which continued with irregular Remiſſions, and with a ſmall, but frequent Cough, till the lovely Child fell away greatly, and became very low, not without ſome Appearance of Danger. It proved however ſufficiently periodical in eleven or twelve Days to admit of a little Tincture of Bark, with a ſmall Bliſter behind the Ear, to which the Fever ſoon and entirely yielding, he began to recover his Fleſh, and chearful pretty Locks. I believe however it was at leaſt a full Month from his Sickening before I thought him in a proper State to receive and to expell the Small Pocks, which he did, by the divine Bleſſing, very happily, having from 50 to 70 very fine Puſtules. This Inſtance I hope may be of uſe to ſome practical Readers, who muſt obſerve I did not forſee, that this ſeemingly ſmall receding from my own Judgement, to ſatisfy a moſt worthy Lady and affectionate Mother, could have been attended with ſuch a weakening Conſequence. This Child was about 15 Months old, and of Courſe below the Age I would prefer for the Operation. But as their Children cut their Teeth very eaſily, and this one never had any Convulſion, and, tho' ſlight, was very healthy; and as I had inoculated a a few Years before another of their Sons of the ſame Age, but ſtronger, very happily, he not having above 16 Puſtules, it was their Choice to have this inoculated too. His Brother, near two Years older, but of a very different Habit, Complexion and Fibre, had a conſiderable Number of diſtinct Pock, with which he was very ſore; though the Diſeaſe was otherwiſe benign, and quite regular.

ous Habits, and adult Years, the Aid of Medicine may be very generally neceſſary. Conſiderable Things have doubtleſs been effected in ſome chronical Diſorders almoſt wholly by Diet; but then the Perſeverance has been chronical too; and where we propoſe a much ſhorter Term for Preparation, we muſt be obliged, in ſome Caſes, to uſe more expeditious Meaſures. Beſides, where the Obſtacles are very conſiderable, the propereſt Diet may become too familiar to effect all we deſire; which ſometimes happens from the over-familiar Uſe even of Medicines, that appeared efficacious at firſt. — But to come to Particulars.

It is manifeſt, that whoever is reſolved to inoculate Children at the Breaſt, (which, upon the whole, we have been far from recommending) will have no need to think of a dietetic Preparation for them (provided they have not been ſo very unſeaſonably indulged in Fleſh and ſolid Food) and very little of any other. We will ſuppoſe their Eruptions in the Month, uſually termed the *Gum*, over before the Operation; and it were deſirable that their Breaſt Milk were rather dilute and thin. Doubtleſs, whatever ſome Moderns may have thought, good human Milk is the moſt appropriate Nouriſhment for the Infant; though Nature has not denied us Succedaneums to it, where the Milk of the Parent, or Nurſe, might diſagree in particular Circumſtances and Habits. But as the Nurſes of griped and flatulent Infants are obliged to avoid ſome Vegetables,

tables, leſt they ſhould exaſperate ſuch Complaints; can we ſuppoſe the Milk of Cows, which is ſolely recruited from herbaceous and chiefly aceſcent Food, will be likelier to appeaſe them, than that of a ſober, wholeſome, well dieted Woman? And yet, with Regard to this particular Diſeaſe, thoſe who are brought up by Hand, as they call it, may not, on that Account, prove worſe Subjects for it than thoſe of equal Age and Vigour at the Breaſt; as the Juices of the Quadruped, who is not the Subject of it, may perhaps furniſh leſs Addition to its *Pabulum*, than the Milk from human Fluids. Their Pap from Bread and Water, at Intervals, can be no improper Diet, the latter being the great univerſal Diluter, and the former a gentle Concrete from a ſoft vegetable Chyle or Milk, prepared for an eaſy Commutation into a mild and animal one. Yet ſhould ſuch an Eruption enſue, which rarely happens at this Age, and very rarely by Inoculation in it, as to affect the Lips, Tongue and Throat, the Want of that commodious and even fomenting *Apparatus*, which Nature furniſhed for the Suckling of the Infant, might be an important * Diſadvantage. We have, in a former Section, averred our Diſapprobation of inoculating at this Time of Life; but if the more adventurous ſhould riſque it, it would be proper to premiſe a little Manna, or ſome other gentle Lenient, to thoſe Children who were uncommonly

* See P. 218.

ly coſtive; which HIPPOCRATES ſays (a) is chiefly their Condition, who heave up their Milk the oftenеſt. If they have moiſt Ears, ſuch Frictions ſhould be daily uſed, as may prevent their drying; tho' I ſhould conſider a very ſore Head and Ears as contra-indicant of the Operation.

By the Time Children are weaned, eſpecially if they are any Way advanced in the ſecond Year, they have been too often indulged the premature Uſe of Fleſh, and even ſipping a little ſtrong Drink. They are in a Courſe of Dentition or Toothing, more or leſs troubleſome, and more generally ſubject to Worms; tho' this Diſorder has been obſerved during the early ſucking Months in hotter Climates. We muſt ſuppoſe none would adviſe, or conſent to, their Inoculation, under a painful and febrile Dentition, an actual Worm Fever, or any pregnant Symptom of their abounding with Worms. But ſuppoſing none of theſe the Caſe, and the Operation (which we have given our repeated Suffrage for deferring, in general, to the Age of four or five) determined on, it may be prudent to premiſe a few Grains of *Aethiops Mineral* and Corralline, or ſome other good Vermifuge, three or four Times; then to give a Grain of Calomel over Night, to be followed in the Morning with a few Grains of Rhubarb by itſelf, or in a Solution of two Drachms of Manna. If the Children are advanced towards three Years, and pretty forward for that

(a) Ὁκοσοισι ϑ πουλυ γαλακϛωδες ἀπεμῶται κοιλιη ξυνισαται. De Dentitione.

that Term, the Powders may be repeated, and the Calomel increaſed to one Grain and a half. Pale, phlegmatic and groſs Children are often the moſt diſpoſed to breed Worms, and moſt liable to Obſtructions of the *Viſcera*. It may not be amiſs to ſhake ſuch firſt, and empty their Stomachs of its exceſſive Phlegm, by a very few Grains of *Ipecacuanna*, or a Drachm and a half or two Drachms, of the Tincture, with a little Oxymel of Squills, and half a Drop of Oil of Rue or Savin. The bitter anthelminthic Powders might be joined here to the *Aethiops*, or to powdered Tin, and their Calomel might be ſucceeded the following Morning with five or ſix Grains of Rhubarb in Tanſey Water, or with *Elixir Proprietatis* from ten to fifteen Drops, which agrees remarkably with pale cacochymic Habits. The *Aethiops* ſeems a preferable Vermifuge in thoſe Caſes, as its Operation, at leaſt 'till it becomes too familiar to the Conſtitution, manifeſtly extends beyond the firſt Paſſages, from its known Efficacy in the Cure of cuticular Impurities; which, if conſiderable from their Quantity, or Irritation, ſhould be removed before the Operation. Thus, without ſuppoſing this Medicine preſervative from this Diſeaſe, with an induſtrious Writer on it, which might encourage too free an Exhibition of it, we can ſuppoſe it may be judiciouſly uſed to free the perſpiratory Ducts and keep up their important, but inſenſible, Diſcharge: as it alſo probably corrects any exceeding Viſcidity and Compactneſs of the Blood.

A Fortnight may generally ſuffice for Preparation at this Age, from two to three incluſive.

When Children are advanced to ſix or ſeven, and from thence towards ten, their Diet, if not neceſſarily reſtrained by the Condition of the Parents, has for ſome Time conſiſted of no ſmall Proportion of animal Food. Their Diſpoſition to breed Worms is perhaps alſo rather increaſed, from their Love of any bad Fruit that falls in their Way. Here the dietetic Preparation, by abſtaining from Fleſh and ſtrong Liquids, ſhould certainly be enjoined. Where there are any Symptoms of Worms, or indeed tho' ſuch Symptoms ſhould be but obſcure, they ſhould take ſuch Anthelminthics, as are appropriated to their different Temperaments; and as many of them appear pretty ſanguine, and ſome even bilious, in this Stage, it were not amiſs to purge ſuch repeatedly with ſubacid cooling Laxatives, ſuch as Manna and Cream of Tartar, genuine Glauber Salt, *Magneſia alba*, lenitive Electuary, Decoction of Senna and Pulp of Tamarinds; premiſing from two Grains and a half to four or four Grains and a half of Calomel, (but theſe laſt Doſes only to the moſt advanced and ſtrongeſt in this Stage) to their laſt Purge or two; as indeed a vermifuge Purge ſhould alſo ſucceed their Worm Powders. It were to be wiſhed that their Bodies ſhould be rather moiſt and open the whole Term, or at leaſt the laſt Week of Preparation. This may be eaſily effected, by allowing a few freſh Prunes raw or ſtewed without

out Senna, which, with their vegetable Diet, will ſufficiently anſwer the Purpoſe. We are told by RHAZES; that the cool and more acid Fruits, as *Rhus*, or Sumach Berries; Pomegranates; unripe Grapes; and the like, which were even acerb, prevented the Blood from being ſo fermentable by the Diſeaſe; and we know that Acids are the natural Correctors of Bile. Whether thoſe however, which amount to Acerbity, may not by Accident accumulate the Bile by conſtipating the Belly may be queſtioned; tho' their immediate Quality were antibilious. The ripe Fruits, at leaſt the ſummer Fruits, of this Climate are rarely chargeable with this Quality; and particularly our ripe Currans, or their Jelly moderately ſweetened, might be pretty freely allowed ſuch Temperaments. I ſhould for my own Part, be for puking the Bilious, even at this Age, to prevent any Infarction of thoſe Veſſels, which ſecrete that humour from the Blood; and keep their Bodies moderately ſoluble afterwards, to prevent any probable Regurgitation of it, from its Turgeſcency in the Gall-Bladder, or its Accumulation in the Ducts. With Regard to Worms, it may be reaſonable to ſuppoſe in general, that Bodies of this Temperament are leſs obnoxious to them, and the hotter Anthelmintics leſs appropriate for them, if they were. Dr. NETTLETON ſays, he obſerved ſuch as were vomited previouſly to Inoculation had the kindlieſt Eruption and Symptoms: but probably this might at leaſt depend as much on their different

Portions of the variolous *Pabulum*, which we have ſuggeſted may ſubſiſt moſt copiouſly in bilious Habits; whence Vomiting will be particularly indicated in ſuch.

With Regard to a preparatory Bleeding in this Stage of Life, we think it can only be adviſeable, when there is a very manifeſt ſanguine Plenitude. RHAZES indeed, in his Chapter of Preſervation (many of the prophylactic Rules in which may be judiciouſly varied into preparatory ones, and were, not improbably, intended by him for ſuch, from an Apprehenſion of ſubſequent Infection) ſays generally, that Blood ſhould be taken from ſuch Boys and Youth, * as had not had the Diſeaſe. He recommends the taking it, by Veneſection, or opening a Vein, from thoſe of fourteen; and by Cupping, from thoſe under it; adding, that their Chambers ſhould be cooled. This laſt Precaution was manifeſtly adapted to his own Climate, and may admit of a reaſonable Qualification in ours, where the Blood is leſs generally ſubject to Expanſion and Effervеſcence. At the Age of ſeven, or even to ten, a previous Bleeding would ſeldom be neceſſary with us; ſome unuſual ſanguine Plenitude may render it prudent, and I ſhould prefer Cupping here. In this and the next Stage the young Patients are ſubject to over-heat themſelves by extraordinary Action and Exerciſe, which ſhould be avoided with Care previouſly to Inoculation, and ſtill more after it, particularly if the Weather be tepid. I am repeatedly

* The *Latin* Tranſlation has it, *pueris et juvenibus*.

peatedly convinced, that any extraordinary Conturbation of the Blood from long external Heat, or violent Motion, may act to as material an ill Effect, as if too much ſtrong Liquor, or an inflaming Meal had been ingeſted. Beſides one Inſtance of this, which I have * already given, Mr GOLDWYER, an eminent Surgeon at *Saliſbury*, informed me, that one of the four, who failed by Inoculation there formerly, was a healthy young Woman of twenty-three Years, who, unknown to the Apothecary that inoculated her, had heated herſelf over a great Fire two or three Hours, and immediately ſhifted, juſt before the Operation. This unhappy Conturbation of the Blood, meerly from great Agitation, (in which it reſembles other fermentable Fluids) without the Addition of any new Matter, is not without ſome Analogy to its Infection from an Imagination ſurprized and hurried at the Appearance of a lately variolous Subject, after it was reaſonable to ſuppoſe an entire Evaporation of the infecting *Effluvia*. But to return — If pure Water had been their Drink hitherto, it were well to continue it. To others very clear ſweet Whey, when procurable, with or without any of the temperate cooling Plants, may be pretty freely allowed: and light Small-beer neither too ſtale nor flatulent, may be indulged thoſe who have been accuſtomed to it. All Cheeſe ſhould be avoided as much as Meat at all Ages; if they have been uſed to much Butter, the Quantity

* See P. 263.

ſhould be leſſened, and it ſhould be recent and well-taſted. Where the Milk they uſe is rich and undiluted, a third or fourth Part of pure Water ſhould be added; more eſpecially if the Patients are remarkably ſanguine, and young; as conſiderable Hæmorrhages by the Noſe often happen to ſuch on the Invaſion of the Diſeaſe; which, tho' not very formidable in that Stage to the Phyſician, may frighten the Patient or his Friends: in which Circumſtance, by the Way, it will be proper to withold all vinous Milk Poſſets, Milk Porridge, and even Milk and Water: allowing Barley Water plain, or very gently acidulated, Pippin Tea, and the like cooling Liquors, if the Bleeding ſhould be very profuſe.

But with Regard to the Quantity of their Food before ſickening, ſuppoſing the Quality well regulated, and their Appetites ſhort of voracious, I ſhould not be for ſtinting them (tho' it may be prudent that Supper ſhould be a moderate Repaſt) and particularly in the early Stages of Life, when (a) Faſting is leaſt wholeſome and tolerable. Dr. NETTLETON complains of the ill Effects of two low a previous *Regimen*, and particularly in the firſt Stage of the Diſtemper. And indeed we might apprehend that Conſtitutions naturally mild with Regard to this Diſeaſe, may be rendered, by too depreſſing a *Regimen* previous to it, more obnoxious to nervous Symptoms and Inſults on the Invaſion of it; to which if

(a) Νησειην φερεσι ἡκιστα μειφακια, παντων ὃ μαλιστα παιδια. L. 1. Aph. 13.

if a competent Fever ſhould not ſucceed, Eruption might be unhappily delayed, or even fatally intercepted. The Purpoſe and Scope of Preparation is to remove or leſſen the inflammable State of the Blood, and the extreme Tenſion of the Solids; but not to depreſs the *Vis vitae*, eſpecially in this, or the preceding Stages of Life. And indeed it may happen here and there, tho' ſeldom, that a Perſon, at any Term of Life, tho' not actually morbid, may be naturally of ſo low a Conſtitution, from an over lax Fibre, and a Languor of the chylifying and nutritive Faculty, that he would prove an improper Subject for this Operation, before he had received ſome * Invigoration from an eupeptic, or eaſy digeſtible, reſtoring, and even reaſonably generous Diet. It will abundantly follow then, that where the Patients in theſe early, or in any ſubſequent Stages, have the plaineſt Signatures of a naturally mild and leſs inflammatory Habit, a lighter and leſs tedious Preparation may be judicious. Repeated unneceſſary Purging, eſpecially with the ſtronger Cathartics, may render a Blood, naturally ſoft and balſamic, too ſharp and acrid, a State we would gladly remove: tho' there may be no injudicious Uſe of ſuch in particular ſluggiſh and cacochymic Habits. If Children, within the Term we have been treating of, have been uſed but to a ſmall Proportion of animal Food, a ſhorter Abſtinence from it may be ſufficient: ſo that three Weeks in ſome,

* See Note P. 291.

ſome, and four in others, may be a convenient Term for their Preparation.

But on the full Approach, and thro' the Progreſs, of Puberty, to the Height and Vigour of Life, the Caſe is greatly altered; eſpecially with Regard to thoſe who were naturally ill diſpoſed for the Small Pocks; and ſtill more particularly, if they have much indulged in the Intemperance too habitual with many in theſe Stages. I have little Doubt but Numbers, thus circumſtanced, ſink under the natural Infection, who might have emerged thro' even that in the preceding Stages. In Fact the ingenious phyſical Suggeſtion of our moſt elegant ethic Poet, That

——— *Man, perhaps, the Moment of his Breath*
Receives the lurking Principle of Death:
The young Diſeaſe, that muſt ſubdue at length,
Grows with his Growth, and ſtrengthens with his Strength.

Seems full as juſt, with Regard to the Fuel of this Diſtemper, as of any other. As the Anticipation of this long and perilous Term then, by an early Inoculation, when a lighter Reſtraint and Preparation might be generally ſufficient, was truly eligible for thoſe, who were ſubject to this Diſeaſe, and muſt be expoſed to it; ſo in ſuch as have omitted it, and are equally expoſed, as its greater Neceſſity ſeems abundantly inculcated from the greater Havock of the natural Diſeaſe throughout the Vigour of Life, a judious and accu-

accurate Preparation for it is ſtrongly indicated from the ſame Motive. For tho' ſome Perſons from twenty even to forty may be better Subjects than others were from five to ten, or indeed ever were, this is not taking the Matter as generally as we purpoſe it; but deſcending to the Caſes of Individuals, which will often have ſuch particular Circumſtances, as muſt be referred to the Conſideration of their moſt intimate Phyſicians, who certainly are, *caeteris paribus*, their beſt. To abate and mollify then the extended inflammable *Pabulum* in ſuſpicious Habits, at ſuſpicious Times of Life, we ſhould propoſe at leaſt ſix Weeks as the *Greeks* do; and, where it was practicable, two Months, in ſome Situations, might be ſtill better. The Mitigation of this inborn Fuel, which has been ſtrengthened by Time, expanded with Accretion, and even invigorated by Health (abſtracted from all the Contingences of different Climates and Exceſſes) is undoubtedly difficult: it ſavours of an Attempt to alter the ſpecific Conſtitution and *Stamina* of the Patient, and calls for all the Caution, as well as Knowlege, of the Phyſician: ſince theſe can be bent or altered only to a certain Degree, without a morbid Conſequence, to avoid which the Alteration muſt be gradual. *Hic labor hoc opus eſt.* There may, without Exaggeration, be ſome Difficulty in miſconducting the milder Subjects of the Small-Pocks, thro' the ordinary Progreſs of it by Inoculation. The oeconomical Functions of Nature are ſo perſeveringly right in

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certain Habits and Circumſtances, that Perverſity, as well as Ignorance, becomes neceſſary to an effectual Oppoſition of them: Such Situations may be juſtly compared to thoſe (a) gentle Seaſons and ſmooth Waters, in which HIPPOCRATES obſerves, the Helm may be committed to an indifferent Pilot; while the oppoſite Circumſtances of adult Age and inflammable Conſtitutions will correſpond to his Storms and Billows, which require the utmoſt Addreſs of the moſt experienced; and expoſe that Ignorance of the unſkilful, which the fine Weather had concealed. And yet even in ſuch critical Situations, every ingenious and experienced Phyſician, who has conſidered this Matter well, may have ſufficient Reaſon to infer, that on availing his Patients of all good Circumſtances, Perſons naturally of unpromiſing Temperaments, and leſs convenient Ages for the accidental Diſeaſe, may have a reaſonable Expectation of paſſing very tolerably thro' that by Inoculation. If he is very ſanguine, he ſhould undoubtedly be bled early, and pretty freely, yet ſo as to avoid too great and ſudden a Depreſſion. If he is ſtill more intenſely ſanguine, with deep red or purpliſh Bumps in the Countenance; and particularly if theſe are chargeable to hard Drinking (which is not conſtantly the Caſe) Bleed-

(a) Ἐπει οἱ πολλοι γε ἀφ' ἱητρῶν ταυτα μοι δοκεουσι τοῖσι κακοῖσι κυβερνηταις πασχειν· ἡ γὰρ ἐκεινοι ὁταν ἐν γαλλωνη κυβερνῶντες ἁμαρτανωσιν, ἐ καταφανεες εἰσιν· ὁταν ὔ αὐτοις καταιχθη ἀνεμος τε μεγας, και χειμων, φανερῶς ἤδη πᾶσιν ανθρωποισι δι' ἀγνωσιην ἡ ἁμαρτιλω ἅπαλοι εἰσιν ἀπολεσαντες τὴν νᾶυν. De priſca Medicina.

Bleeding ſhould be repeated, ſuch a Blood being generally very pregnant with the variolous *Fomes*. This we are endeavouring to leſſen, to dilute and lower the inflammable Principles of what remains; and to ſubſtitute, by proper Nouriſhment, ſuch a ſoft and ſimple Chyle, as ſhould conduce to a leſs irritable and irritating Blood. If he has been remarkably fond of Fleſh-Meats, and even indulged on ſuch Suppers, he may be allowed for the firſt Week, to make the Alteration more gradual, white Meat once every other Day. It were undoubtedly to be wiſhed he could entirely abſtain from ſtrong Liquor: but if from long Habitude he ſhould prove languid, and ſeem to digeſt leſs for Want of it, one Glaſs may be permitted after Dinner. The ſecond Week he ſhould begin to abſtain wholly from Fleſh; but may add every other Day, a Whiting, freſh Water Flounder, or ſuch light ſimple Fiſh, to his vegetable Dinner; and an equal Quantity of Water to his Glaſs of Wine after Dinner, if it is ſtill too irkſome to take an entire Leave of it, 'till his Recovery from the Diſeaſe. His Diet from hence ſhould be entirely vegetable; his Drink no ſtronger than good light Table Beer. His Puddings ſhould not be over-ſtiff, nor crammed with Eggs. Fruit Pyes and Tarts may be allowed, reaſonably ſweetned: moſt Vegetables, the hot and acrid (as raw Onions, Creſſes, Muſtard, Leeks and the like) excepted, are very proper: but particularly, if good mellow Turneps and ſucculent Spinage are in Seaſon, they are either very excel-

lent and proper in themſelves, or I am much prejudiced in their Favour on this Occaſion. If good Vinegar be not diſagreeable to him, the moderate Uſe of it is not like to be inconvenient. The cooling Salads, or with a little Cellery, are not amiſs. Young open Spring Cabbage and Sprouts ſeem preferable to cloſe, heavy, large Cabbage, which, (beſides their being conſidered as an alcaleſcent Plant) may have attracted a conſiderable Proportion of animal Sulphur and Salt into their Subſtance from their ordinary Compoſt, during their long Vegetation; as the ſtrong Smell of their Decoction ſeems to indicate. Such a Savour may certainly reſult, in ſome Degree, from the eſſential Quality of the Plant; tho' in the hotter Climates, where their Texture is leſs cloſe or ſolid, and their Perſpiration greater, their Sapour is ſenſibly milder, their Odour leſs indelicate. Yet, when the Sprouts and Spring Cabbages are not to be had, as the other well boiled are apt to keep the Belly ſoluble, they may be allowed ſometimes. I was once inclined to heſitate, upon the ſame Principle, whether Aſparagus, from its known diuretic Quality and Alteration of the natural Smell of Urine, ſhould be freely allowed on this Occaſion. Dr. ARBUTHNOT reckons it among the anti-acid or alkaleſcent Plants; ſome Phyſicians have ſuſpected it to be hurtful to the Kidneys, from its Effect on the Urine: and I have heard, I cannot ſay how truly, that Dr. TRONCHIN forbad it to Perſons preparing for Inoculation at *Paris*.

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In this Climate the Soil for it is generally furniſhed with a high ſulphureous ſaline Compoſt, which may exalt this Effect of it, without ſuperadding a new Quality, or altering the eſſential Nature of the Plant from that of the indigenous or wild, which is ſaid to abound on the Banks of the *Euphrates*: tho' ſome Perſons who admire this Plant, remote from *London*, are ſaid to be averſe to it here, as ſtronger and leſs palatable. But whatever material Diverſity this may produce, ſome have imagined, that particular Salts, conveyed into the Humours, prove attractive of the like there (from the Axiom of *ſimile ſimili gaudet*) which they ſeparate and carry off. From ſuch a Suppoſition perhaps ſome have adviſed ſick Perſons to drink their own Urine; while others have recommended Sea-Water as a Cure for ſuch Scurvies, as we ſhould aſcribe, in ſome Meaſure, to a muriatic State of the Blood. Now the ſenſible Taſte or Smell of Aſparagus, raw or boiled, has nothing of that particular Odour it ſuperadds to human Urine: if it has produced this, in Conſequence of its determining a greater Proportion of excrementitious animal Sulphur or Salt to the Organs of urinary Secretion, and left leſs of its own behind, this purging by Urine will rather have a Tendency to purify and cool the Blood. All the Paſſages ſhould be free during Preparation, and the only Doubt can be, whether it may not prove ſo diuretic, as to evacuate too great a Proportion of the diluting *Serum*. Yet on the whole, tho' we would omit no Hint

that others may improve, from a puerile Dread of Cenſure, it is probable the Matter is hardly worth a Litigation; and, where Aſparagus is liked, it may be uſed with ſufficient Safety, as a ſoft palatable Mucilage, and a pleaſant Variety in this limited Diet: by which, tho' we do not propoſe any very ſenſible Depreſſion of the Patient's Strength, we aim at a Mitigation of it; and to add ſuch a Doſe of Alloy to the Metal, as may render it more ductile and tractable.

This Kind of *Regimen* will often diſpoſe the Belly to be moiſt and ſoluble, and render much purging the leſs neceſſary; ſo that a gentle cooling Lenient once a Week, before the Infuſion, will generally be ſufficient. It may be prudent however to premiſe a few Grains of Calomel, proportioned to the Age and Strength, to the two, and in ſome Inſtances, to the three laſt Lenients; by all which we would endeavour at a reaſonable Diſcharge, without great Commotion or Sickneſs.

Theſe previous Doſes of Calomel, however moderate, oblige us to recur to Dr. HAEN's Prediction * of the Fatality of the Small Pocks after the Uſe of Mercurials; which Dr. TYSSOT admitting to have been verified in a Girl ſo circumſtanced, we muſt obſerve, that this ſingle Event is inſufficient to eſtabliſh a general practical Rule or Precept, although it had been certain, that ſhe died of the Small Pocks from the Effects of the previous Mercury, for whatever Purpoſe it might

* See P. 275, 276.

have

have been given. For had we even admitted it to have been very prejudicial in her Conſtitution, this could not oblige us alſo to admit, that it would have been ſo in a different, or oppoſite, one. It proves indeed that Mercury, or ſome Preparations of it, did not prevent the enſuing Small Pocks (which by the Way were not from Inoculation) from being fatal to this Individual, which is all it certainly proves. It no ways demonſtrates, nor indeed affirms, ſhe had not a very bad Conſtitution for this Diſeaſe; which, on a Suppoſition that ſhe had, muſt probably have killed her, had ſhe taken no Mercury, or whatever ſhe had taken, or omitted. As it is not mentioned by Dr. TYSSOT (and we have not ſeen Dr. HAEN's *Ratio medendi)* for what Diſtemper ſhe had taken Mercury, it might not have been perfectly cured when ſhe was ſeized; and might have concurred either to aggravate the Small Pocks, or have made her leſs able to ſurmount it. I confeſs at the ſame Time, I ſhould have had my Fears for thoſe *many* Dr. MEAD mentions, * who took the Small Pocks in an Hoſpital, where they had been ſalivated, probably for the *great*. I ſhould have thought them rather too dry, and too hectically diſpoſed for this Diſeaſe, untill they had been tolerably repleniſhed by light fluid Nouriſhment. Nevertheleſs, as Dr. MEAD's Credit, in Matters of Fact, may, without the leaſt Detraction, be ſuppoſed equal to Dr. HAEN's; and as his *many* ſaliva-

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* See P. 275.

ted ſurvived the Small Pocks, while this *one* uſing Mercury, and not to a Salivation, died of that Diſtemper ſoon after it, the whole of theſe Facts will conclude much more in Favour of Mercury previouſly to that Diſtemper, than againſt it. Yet after all, perhaps theſe *many* might have been naturally good Subjects for the Diſeaſe, and that *one* a bad one: whence the very ſame Events would probably have enſued, if Mercury had been wholly out of the Queſtion: though this muſt follow from admitting all the Facts, that Mercury, attended with its moſt forcible and durable Operation, did not render the Hoſpital Patients *bad* Subjects for the Small Pocks.

Further, if it be conſidered, that BOERHAAVE, who muſt have read, reaſoned and practiſed himſelf into a juſt Idea of the Diſeaſe, ſuppoſed an Antidote againſt it might be found in Mercury, or a Combination of it with Antimony, deprived of all their Acrimony, it will not impreſs the Reader with an unfavourable Opinion of gentle Doſes of the mildeſt Preparations of Mercury, in preparing for the Small Pocks. I recollect indeed to have read, without recollecting where, that the *Germans* were very fond of giving Calomel in epidemical Seaſons of the Small Pocks, before Seizure, by way of diſpoſing an enſuing Invaſion to prove a mild one: now if in ſuch Caſes they dealt it out too freely [and Dr. HEISTER's Doſes of moſt Medicines would be thought here very ſtrong ones] Dr. HAEN's Averſion to ſuch an Uſe of Mercurials might be very judici-

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ous —— But tho' we have made this Inſertion here, on Account of that Gentleman's Prediction againſt Mercurials before the Small Pocks, we have found no Reaſon for contracting the ſmall Doſes of *Calomel* recommended in the the former Edition. Many more, with myſelf, have been Witneſſes here to the innocent, and, we have imagined, to the advantageous, Uſe of ſuch gentle, and not very frequent Doſes of it, in ſome Conſtitutions and Circumſtances previous to Inoculation. It is certain however, there are many who do not want it, and ſome for whom it may be improper: notwithſtanding we read from *Philadelphia*, that out of 700 lately inoculated there, but one has miſcarried; all, or the greater Part having taken repeated Doſes of *Calomel*, with the *Sulphur auratum Antimonii*. But to return from this neceſſary Digreſſion.

Much the ſame Preparation will anſwer for the adult bilious Patient; tho' a ſingle Bleeding may ſuffice here, particularly where the Habit is dry withal. But a Day or two after the Bleeding a moderate Vomit ſhould be enjoined with plentiful Dilution; and if it terminated in a Stool or two it would not be the worſe. He may conveniently indulge in the acid Juices, as thoſe of Lemon and Orange, add the beſt Vinegar to his Spinage and Greens, and any of the Sorrels to his Salads. In Adults in general, where the Teguments are rigid and thick, and Sweating is difficult, I ſhould think the repeated Uſe of tepid relaxing Baths, after the former general Evacuations,

tions, and upon empty Stomachs, would bid very fair to be of great Service. Such Teguments too frequently threaten a very bad internal Diſpoſition for the Diſeaſe, as they are certainly a bad external Circumſtance for it. Dr. HAHN juſtly obſerves, that the (a) different Texture of the Skin in different Nations and Families is an adequate Reaſon for the different Severity of the Diſeaſe; and a chief Cauſe that ſome entire Families are deformed by the Scars of the Confluent Small Pocks. RHAZES recommends ſwimming in cold Water among his other Prophylactics, which with us might prove a better Preſervative than Preparative: and in this Climate, where we do not propoſe to ſelect our only ſwimming Seaſon for that of Inoculation, it may be advantageouſly commuted in bad Habits for the other; where gentle and repeated Frictions will conduce to remove any cutaneous Obſtructions; a ſubſequent dewy Perſpiration will relax the Teguments, and further clear the Ducts; and where a Quantity of pure Element, repeatedly taken in by the inhaling Veſſels may conſiderably dilute and attemper the Maſs; and thus diſpoſe the Fluids and Solids, as far as we can without Violence, into the young and ductile State. The bilious ſhould indulge the leaſt in Milk, Butter or Sweets; and if

(a) Atque in tali, tot, et multo pluribus modis variante cutis fabrica, qua nationes a nationibus, familiae a familiis diſtant, potiſſimam varioloſae difficultatis culpam reſidere arbitror; et ſaepe ſolam et ſufficientem rationem, cur integrae familiae confluentium barbariae expoſitae eò condemnentur, ut etiam extra lupercalia circumferant facies larvatas. *Variol. Rat.* § 96.

if they eat much Aſparagus, dipping them in a little of the beſt Oil and Vinegar, which the COUNT of GISORS did, ſeems preferable to Butter. RHAZES nevertheleſs recommends, among his Preſervatives, Butter-Milk; and where it does not diſagree, itſelf and its Whey ſeem well adapted to cool; as they have been found particularly ſerviceable in ſome hectical Habits. He alſo recommended to hot Temperaments an Addition of Ice to their Water. Pure Spring Water would be equivalent here, and anſwer particularly in the dry, hot and bilious; where the Adults Stomach would bear it tolerably. But the Phyſician employed can be the only adequate Judge of this and many other Circumſtances; and there is little Hazard of his committing any material Error in it, who has thoroughly digeſted the very judicious Admonition of HIPPOCRATES, in making (a) proper Allowances for the Diverſities of Seaſons, Climates, Age, Conſtitutions and Cuſtoms. I muſt aver however, that, in the general Courſe of my Experience of this Affair, I have known no conſiderable Inconvenience, but a general Improvement of Body for the Diſtemper, from this Tranſition to a fluid and vegetable Diet, from a common one. I have repeatedly heard thoſe advanced in the *Regimen* confeſs, they were lighter and had better Spirits under it, than from their ordinary Courſe of Life, which might be called rather liberal than

(a) Δοʃίον δε τι καὶ τῃ ὥρῃ, καὶ τῃ χωρῃ, καὶ τῃ ἡλικιῃ, καὶ τῳ ἐθει. L. 1. Aph. 17.

too moderate; no ſlight Indication of the general ſalutary Effects of a light and temperate Diet. Soup-maigre, that is, without Meat, of the temperate Plants and Bread, with the fine ſubacid gelatinous Pulp of the ripe *Tamata* or Love-apple, called by the Botaniſts *Lycoperſicon*, would make an agreeable Variety, and even a palatable Regale in their Food. This reminds me of the general Diet of our *French* Neighbours, which is not ill adapted to this Diſeaſe in a bilious Temperament, to which they ſeem to approach a little more than ourſelves; and, upon that Score, might prove more indifferent Subjects for the Small Pocks. But it may be apprehended their Uſe of ſmall light Wines, and very conſiderably diluted, of Water by itſelf, their Sallads, their plentiful Soups, their more limited Uſe of Fleſh, and their whole *Ratio vivendi* or Way of Life, incline the Balance, with Reſpect to this Diſeaſe, in their Favour.* Such a mild moiſtening Diet gently relaxes the Fibres and Teguments, in Conſequence of its diluting the Blood. And ſuch a State of the Teguments has been not ſeldom experienced to counter-operate many threatning Symptoms from a very copious Eruption: ſo that the Texture and Conſiſtence of our Invelopements are often at leaſt of equal Import, with their Complexion.

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* In Fact there is not the ſame Proportion of Faces ſcarred or deeply pitted by this Diſeaſe in *Paris* as in *London*: tho' their Number here has been thought to leſſen obſervably, ſince the frequent Uſe of Inoculation.

The worſt Temperament for this Diſeaſe remains; which gives me ſome Idea of what the Antients termed the atrabilious; and which implies to me ſuch a Shade and Darkneſs of the Complexion, as People commonly attribute to a black Jaundice; in which the Blood ſeems to be in a kind of empyreumatic State. A ſmall Proportion of theſe I imagine emerge through the natural Diſeaſe: they look conſtitutionally morbid here, where we cannot conſider the meer Climate as conducive to it. An exquiſitely inſtituted Inoculation muſt give them their beſt Chance, and even the moſt judicious one might ſometimes miſcarry. Conſiderable internal and external Humectation ſeems indicated here; and if we could effect a moderate Succulence of the Habit, a Tenuity of the Surface, and a little Clearneſs of the Complexion, it might afford a reaſonable Proſpect of Succeſs. It is happy that we do not abound with Perſons of this natural bad Complexion and Temperament for this Diſeaſe, which generally appears too ſullen and inflexible, to ſubmit to a competent Alteration in the adult and advanced Stages, in which it ſeems to appear more intenſe too.

Preparation ſhould be ſo timed and adjuſted for Women and adult Virgins, that the Operation might take Place ſoon after the compleat Termination of the *Catamenia*; or, at the fartheſt, three or four Days after their going off; which indeed, ſuppoſing a gentle Diſtemper to enſue, will admit an Interval of three Weeks before

their ordinary Return; a ſufficient Term for the Tour of the Matter, and Revolution of the Diſeaſe. Doubtleſs inoculating very ſoon after this natural ſanguinary Depletion of the Sex has a cloſe Reſemblance to the preparatory Bleeding we have recommended, in adult ſanguine Patients: and in Blood proportionably pregnant with the variolous *Fomes*, the ſmaller Quantity of the former muſt contain a ſmaller of the laſt: whence the Practice is rational in itſelf, beſides the Sanction of long Experience in its Favour. I ſhall however obſerve here, that having long ſince had a Gentlewoman of a full Habit and about forty, in the natural Diſeaſe, and in very hot Weather, her *Catamenia* came down in the *Apparatus*; and, as ſhe apprehended, in their proper Courſe. Her Acquaintance were apprehenſive of her Danger in the Small Pocks, from her Habit and Time of Life. Her Complexion too was rather brown, but not an unclear one; for I think there is ſuch a Diverſity. They flowed throughout the whole Term of Eruption, which was very moderate for a natural Infection in ſuch a Subject and Seaſon, and ſhe had a truly regular benign Diſeaſe.

To confeſs the Conſequence of this Caſe on myſelf, I conceived a Hint, that as it ſeemed highly probable, this regular uterine Diſcharge conſiſted of variolated Blood, it might prove an adequate or conſiderable Cauſe of the moderate Eruption and kindly Diſeaſe that enſued: whence the Inference was obvious, of ſo timing the Inoculation

culation of adult Females, eſpecially where we apprehended the greateſt Eruption, that the regular Deſcent of the *Menſes* ſhould coincide with the Invaſion of the Diſtemper. In the Conflict betwixt Nature and Diſeaſes, Phyſicians find ſome Occaſions of judiciouſly declining that direct Engagement, in which they ſolely rely on the Strength of material, or, as ſome have called it, *herculean*, Preſcription; but, like prudent Generals, obtain Advantages and final Victory by Diſpoſition and Stratagem. This medical Stratagem, nevertheleſs, I am unable to recommend from any further and purpoſed Experience, as I found the former Practice very ſucceſsful, and thought of the *Spaniard*'s Epitaph, who died, becauſe he wanted to be better than well. And yet when I compare the Event of this Caſe with the Relation Dr. FULLER gives us of a Student at *Oxford*; who, during an epidemical Small Pocks there, was ſeized with a cruel Pain in the Head and Back, and a *Delirium*, with the Eruption of many Puſtules, pronounced to be the Small Pocks by his Phyſicians; but all which Symptoms and Appearances entirely vaniſhed on his bleeding about two Pounds by the Noſe, the Patient quickly recovering, and for thirty Years after never avoiding nor receiving the Small Pocks: I ſay, when I recollect this Caſe, and the Probity of the Relator, I have wiſhed the former Hint repeatedly experimented on proper Subjects, juſtly obnoxious to it, to determine if a ſimilar Benefit ſhould prove its general Event. And as I re-

collect

collect a little Inſtrument for effecting a Hæmorrhage of the Noſe at Pleaſure, it may be conſidered, whether the Application of it in ſanguine Subjects, with an inveterate Head-ach, in the Attack of the Diſeaſe; or in a very early Eruption, accompanied with high inflammatory Symptoms, might not be judicious; from its diſcharging ſome of the Blood in the *Carotids*, which we imagine may be charged with the moſt † energic *Miaſmata* of the Diſeaſe. But theſe, and many other Imaginations, I willingly expoſe to every medical Stricture and *Criterion*, for the Chance of their proving ſalutary to any, and improvable, or reprovable, by ſome other, to my own Emolument, or Conviction.

But all Perſons ſhould be prepared, if practicable, at a ſufficient Diſtance from * infectious Scenes

† See Page 190.

* It may certainly be affirmed, that an Inattention to this moſt important Circumſtance has often concurred to any extraordinary Fatality we may have heard of by Inoculation, at different Times and Places. We had a Report at *London* that of 30 inoculated at *Chicheſter* a Year or two ſince, 10 died; of which 10, if this Report be true, a conſiderable Majority muſt, rationally ſpeaking, have either imbibed the natural Infection, or have been very crudely treated before or after Inoculation. A Letter from a Practitioner on the Spot, occaſioned by this Report, terms it *malicious*, and ſays the Truth was, that out of 420 inoculated 14 died. This makes one out of 30, a very unuſual Porportion; tho' if the natural Diſeaſe had been very deſtructive, it might have proved a very ſaving one. But this Practitioner having been acquainted, in Anſwer to his Letter, that it was ſtill ſuppoſed here, ten died out of the firſt thirty inoculated, after which they might perhaps have inoculated 380 more and loſt but four of them, which, with the former ten might make out the 14 out of 420; his early Anſwer to this was intreated, above a Fortnight ſince, but has not yet been received, which may be owing to other Buſineſs

Scenes and Accidents; notwithſtanding Multitudes have been prepared, to a very happy Event, very

ſineſs, or the Time that is neceſſary to make a thorough Enquiry into the certain Truth. This, if it arrives before the final Impreſſion of this Treatiſe, ſhall be added to the Appendix. In the mean time we may obſerve, how difficult it is to ſuppoſe that 380 more would be inoculated the ſame Seaſon, if ten had miſcarried out of the firſt thirty, which would juſtly be thought a moſt extraordinary and uncommon Proportion by the natural Diſeaſe, however violent, throughout a conſiderable City.

My Information of the Events of the Small Pocks of 1760 in *South Carolina* are leſs preciſe and ſatisfactory than I could have wiſhed. as no very exact Regiſter ſeems to have been kept. I ſhall ſubmit them however to the Publick as faithfully and as variouſly as I have had them. A Lady from thence has ſhewn me a Letter, in which another informs her there have been 3000 inoculated, of which 140 have died.' And to the beſt of my Recollection it has been ſaid at the *Carolina* Coffee-Houſe, they amounted to 160. Dr. CHALMERS in his Letter of Feb. 12, 1761, ſays, on a Suppoſition I had wrote to a Lady in *Charles-Town*, that we heard 160 of the Inoculated had miſcarried. — "That it is not in his Power to give me full Satisfaction on this Head, but refers to a Bill of Mortality he incloſes, that he ſays will aſſure me they fell ſhort of that Number; altho' they were greater than uſual, where things are well conducted in this Way ——— but nothing, he adds, could prevent the Precipitancy with which People engaged in it." This Bill reduces the Deaths by Inoculation, of all Colours, to 92; and makes all the Deaths by the natural Diſeaſe 848; but neither aſcertains the Numbers infected by Accident, nor by Art. The ſame Phyſician ſays, "How many have been inoculated I know not, but believe from firſt to laſt they rather exceed 3500 of all Colours. which being divided by 92 makes the Deaths by Inoculation 1 in 38, a much greater Proportion than uſual indeed, but which, from the Sequel we ſhall not be ſurprized at. He alſo ſays, "it cannot be aſcertained without a good deal of Trouble, how many had the Small Pocks in both ways, but thinks they muſt probably have amounted to above 6000 in all." Now as we have ſet down the inoculated at 3500. (tho' he thinks they rather exceeded) theſe being deducted from the 6000 (tho' he alſo ſuppoſes they might amount to ſomething more) leave 2500 of all Colours for natural Infection, of which there have died by the publick Bill 848, which is a full third and 44 over, of thoſe naturally infected. This indeed was enough

very near, and even in, *London*, and other infected Towns in *Asia* and *America*. And yet I must

enough to term it *pestilential* as it has been termed, in the *Carolina* Gazette, and proves that Inoculation, at the very worst, was of great Service to this valuable Colony. On supposing 140 of the inoculated deceased, it would have been 1 in 25: and on admitting the very worst Rumour of 160, it would have been at the nearest in whole Numbers 1 in 22; which least favourable Proportion has a vast Advantage over 1 out of 3, or rather something less than three. Now tho' this extreme unusual Violence of this epidemical Small Pocks would go a great Way towards accounting for this unusual Proportion by artificial Infection, as we have more than once observed; yet it would be unfair to suppress the Disadvantages under which Inoculation was performed in *Charles Town* at this time; or to conceal the great Probability there was of natural Infection's being frequently blended with it. The Doctor informs me, Preparation commenced with his Patients the 7th of February, and the Operation followed on the 11th, very justly lamenting this short Term for the Improvement of many Habits for this Disease. We may reasonably suppose, that other Practitioners were in the same Situation with Regard to their Patients [and it has been said there were but two then in the Town who had seen or considered the Practice] as he says, "there was no Election of Subjects, for the Incision must be performed on all that offered, from which *alone* they fondly expected the most happy Effect ——— As it was not in the Practitioners Power to perform the Incision so fast as Objects offered, many inoculated their own and other Families; so that the Bulk of the Inhabitants might be said to be infected before the 16th of February; betwixt which Day and the 11th about 400 fell to my Lot: but during the Course of this Disease somewhat above 550 were inoculated for me; besides attending more than 200 in the natural Way." Previous to this he observes, "the natural Small Pocks made its Appearance by the 6th or 7th of February in almost every Street, and acknowleges the Loss of eight Whites and two Blacks out of the Numbers he inoculated." What this Gentleman adds, of the great Scarcity of Nurses, who were not to be procured in a sufficient Number at 3l. Sterling per Week —— of the Want of common Necessaries for the Sick, as the Country People forbore coming to Town with them ——— of the Impossibility of seeing each Patient once a Day, and many other such affecting Circumstances, we make no sort of Deduction for in Favour of Inoculation,

muſt confeſs, I have been ſometimes unhappy, from reflecting on this Circumſtance, while I inoculated Perſons in *London*, who had not confined themſelves for a few Weeks before it, eſpecially when the Diſeaſe was much extended. I have been ſhocked to hear, that Subjects intended for the Operation, have been permitted to walk about indifferently, and tranſact their Buſineſs; and if they were young, it is too probable, they might purſue their Diverſions too. However one young Gentleman from abroad, who had been thus imprudently indulged, having had a very difficult, deforming and painful Eſcape thro' the Diſeaſe, by Inoculation, it may probably prevent a Repetition of the ſame thoughtleſs Temerity. Nevertheleſs, to the writing of this, I never judged from the Conſequence, that one of the many I have inoculated here, had ever imbibed a previous Infection; which I own I have ſometimes been inclined to conſider as almoſt providential, when they would not be confined as I could have wiſhed. We had already obſerved

culation, as the Subjects of it endured but their Proportion of them, in common with thoſe who were naturally infected. The moſt material Circumſtance ſeems to be, their being inoculated, and, as it were, wholly unprepared, when the natural Diſeaſe was viſible in almoſt every Street of a Town which takes up but a few hundred Acres of Land. As I have conſtantly inſiſted, that ſcratching or dividing the Skin, and inſerting the Matter is not all that is eſſential to Inoculation, and particularly perhaps to that of Britiſh Subjects, I think no Perſon can term this precipitate, indiſcriminating, tumultuous and unguarded Adminiſtration of the Method, a rightly inſtituted Inoculation, that is, the moſt requiſite and moſt ſalutary one: neither could their Situation indeed havea dmitted of the very ſafeſt.

the Danger and Abſurdity of carrying thoſe to be inoculated to the Houſes of the Sick, and here earneſtly adviſe all ſuch in *London*, or other conſtantly infected Places, to keep up, at the leaſt, for a Fortnight before the Operation; as it muſt be a Satisfaction both to the Patient and Phyſician, to be free from all Apprehenſion of any natural Infection, of any Mixture, Confuſion, or poſſible Aggravation of the Diſeaſe from a variolous Superfætation, as ſome may ſuppoſe it: notwithſtanding we think it muſt appear probable, with Regard to Inoculation, that where a very little Matter infects, the Addition of a little more, and at a ſubſequent Term too, is † attended with no Exaſperation, nor a longer Continuance of the Diſtemper. To confeſs a bold Error perhaps, I have ſometimes imagined, that Inoculation being admitted ſoon after an unconſcious Infection, may not only not exaſperate its ordinary Operation; but poſſibly be attended with ſome Benefit from the Revulſion occaſioned by the variolated Inciſions, if they ſhould diſcharge well: but in ſuch a Caſe, if the Patient miſcarries, the Fatality will be generally aſcribed to Inoculation, tho' perhaps unjuſtly, which ſhould increaſe the Vigilance and Caution of the Inoculator in this Reſpect. The only inoculated Perſon I ever ſaw ſcarred was a Lady, otherwiſe very agreable, who was poſitive ſhe had taken Infection both ways. I did not attend her, but from the cruel Triumphs of the Diſeaſe, I ſtrongly ſuſpect the natural Infection was

† See the Caſe of the youngeſt Miſs MATY, P. 210, and alſo 208.

was in her Caſe the active one. Perſons after Inoculation are generally kept out of the Way of further Infection, which is highly prudent; as it is more natural to be apprehenſive of ſuperadding the Mode of Infection we dread to that we embrace, than the Reverſe. But if ſuch natural Infection ſhould take place, it muſt probably happen before the Inoculated ſicken by the Operation. And even under ſuch an unlucky Combination, I can ſuppoſe the well diſcharging Iſſues of the Inoculated may do as much Service, as the ſmall Doſe of Poiſon they received, can do Prejudice. I do not however mention either of theſe double Impregnations (as they may be called) of the Small Pocks, as what I would wiſh to have experimented on any innocent Perſon; but I ſubmit them merely as medical Suggeſtions, to the Judgment and Scrutiny of others.

It were ſuperfluous to mention Abſtinence from ſalted Fleſh during Preparation, when Abſtinence from Fleſh-meat, and more particularly from all ſuch as uſe to be ſalted, has been affirmed neceſſary. But it may be aſked, if Salt itſelf is allowable with the humid and vegetable Diet enjoined then. We have already evinced, * that the fixed Salt of the human Syſtem is, in Effect, marine eſculent Salt, and diſtinct from that volatile alcalious one, ſuppoſed particularly inflammable and varioleſcent. The former is probably never volatilized by the Sun from the ſalteſt Parts of the Ocean in the hotteſt Climates; and raiſed

* See P. 56.

from the *Caput mortuum* of human Blood and Urine, not without a calcining Heat; while the volatile Salt and Sulphur of dead Bodies very ſoon and perceivably take Wing, without any chemical Proceſs, in hot Weather. I cannot learn that Sailors, whoſe Bodies muſt be conſiderably ſaturated with this fixed Salt, are more obnoxious to the high and mortal Degrees of the Small Pocks, than Landſmen of the ſame Age and Temperament. Doubtleſs it may have a Tendency to produce that Rigidity of the Solids, which appears an unfavourable Circumſtance for an eruptive inflammatory Diſeaſe: but it may deſerve our Reflection, whether its Reſiſtance of Fermentation and Putrefaction may not counterbalance, and often outweigh, ſuch an Inconvenience. Some Proportion of it has certainly its material Uſes in the human Syſtem, or we had never, from the earlieſt Accounts of Time, had ſo general an Appetency for it. The great Diſtreſs of the *Canadians* for Want of it, after the late Conqueſt of *North-America* was evident in their prefering Salt, or Salt Proviſions to Money, in Lieu of their freſh. The *American* Indians are ſaid, when without this Commodity, to ſupply the Want of it, with the Aſhes of Oak and Hickory; which ſhould ſeem but an indifferent Exchange for it, eſpecially in thoſe preparing for Inoculation. And the Deer and Buffalo of *America* certainly have a Taſte or Inſtinct, by which they diſcover ſaltiſh Soils, where they recurr to lick the Earth, and leave plain Marks of it; the Hunters frequently

quently beſetting them at ſuch Haunts. Other Quadrupeds, into whoſe Food it does not ordinarily enter, are relieved from different Diſeaſes by it: And every one who has peruſed the many Caſes and Cures related by the learned Drs. Russell, Wilmot, Frewin and Lewis, in the former's Treatiſe *de Tabe glandulari*, muſt think the Salt-Water a very material Auxiliary in preparing ſtrumous Bodies for Inoculation. But ſuppoſing the Conſtitution clear of every ſcrophulous Taint, if Salt agreed with them at other Times, ſuch a moderate Uſe of it, as did not diſpoſe them to be hot and thirſty, may be allowable. The very Sanguine and Bilious might with Advantage perhaps withdraw a little of their uſual Quantity at other Times, eſpecially if they were addicted to much, and blend from fifteen to thirty Grains of pure Nitre, according to their Age, daily with it: but this will ſeldom be neceſſary in Children, never in Infants, and would be imprudent in cold low Habits.

During Preparation, and after the Infuſion, it will be right to confirm the Patient in the beſt Opinion of its good Effects in general, and the ſtrongeſt Hopes, even to a moral Certainty, of his own getting happily through it. This may be fairly done; but if the Suppreſſion of any fatal Miſcarriage, or the Extenuation of any leſs Misfortune from Inoculation, were ever excuſable, the Encouragement of a preſent timorous Subject of the Operation muſt be the beſt Excuſe for it. Hope is a moſt efficacious, tho' impal-

pable

pable Cordial, which very benignly fortifies the oeconomical Functions of Nature, by a direct Application to the Mind and its vital Inſtruments. Nevertheleſs, a prudent Phyſician will remonſtrate the Neceſſity of ſome Fever, and a few Symptoms previous to Eruption, which ſo very generally happen even to the Inoculated; that his Prediction of the final good Event of it may be the better credited.

If thoſe to be prepared have any Iſſue, not yet dried up, tho' it has entirely fulfilled the Purpoſe of its Application, and the Patient has been judged healthy enough for Inoculation, the Iſſue ſhould not be ſuffered to heal and cicatrize, but be gently touched with the variolous Matter, when another Inciſion, if another ſhall be thought prudent, is made and infected: ſince this new Stimulation of an old Sore may be apt to quicken the Courſe of the Humours to a Part they have been accuſtomed to.

Thus much concerning variolous Preparation, with Regard to the different Ages and Temperaments; to which we ſhall add, that ſuch a very latently perverſe Subject for this Diſeaſe may ſometimes, however rarely, preſent in any of them, as to diſcredit the beſt concerted Operation: For tho' we have ſufficient Marks and Signatures for diſtinguiſhing, in general, the Circumſtances and Appearances favourable or unfavourable to Inoculation; yet as the Diſcernment of the moſt Sagacious is no ways intuitive; and the moſt ſeemingly well conſtituted Body may have ſome

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Peculiarity of Texture in the Solids, of Conſiſtence in the Fluids, or of Conformation in ſome organical Part, concealed from us, but diſcoverable by this penetrating Diſeaſe, a Miſcarriage may occur once in a thouſand Inſtances, where the moſt Sagacious could not have expected it. But this is no more than what occurs, on different Occaſions, in the Application of the beſt Means, under the beſt human Direction. It has a Tendency, as the late BISHOP of *Worceſter* excellently obſerves, in his Sermon concerning Inoculation, to refer us to our ultimate Dependance on the SUPREME CAUSE, as it ſuggeſts our profoundeſt Veneration of His ſole Omniſcience, whoſe Ways are paſt finding out.

Though ſome few have mentioned, and perhaps attempted, a further Preparation after they had infuſed the Diſeaſe, I hope I ſhall be readily excuſed for treating but ſummarily concerning a Practice I have never ventured to experience: it being my preſent Opinion ——— That after the Matter is applied to the Blood, nothing ſhould be done that may occaſion any conſiderable Variation, either in the Increaſe or Abatement of its ſpontaneous natural Motion; except an unuſual Coſtiveneſs in a ſuſpicious inflammable Subject ſhould require a few ſtewed Prunes to procure an eaſy Diſcharge, in Caſe of the Inefficacy of which, a gentle opening Clyſter might be allowed. For if generous Food or cordial Medicines were given under a Notion of fortifying the Conſtitution and Spirits againſt this particular Poiſon, they would be likely

likely rather to co-operate with its *Stimulus*, and to promote a premature Sickening. If Bleeding, or other Evacuations were uſed, or the Quantity of their light Food were too much diminiſhed, with a View to moderate the ſubſequent Fever and Inflammation; a Confuſion, more or leſs conſiderable, might be produced in the Type or Form of the Diſeaſe: The Sickening might be retarded; or when the Symptoms appeared, they might, eſpecially in the mildeſt Habits, prove rather nervous than inflammatory. Hence the Phyſician muſt be reduced to kindle up a Fever, for want of a ſufficient one to produce Eruption: and if he failed to effect this, and to attract the moſt active Particles of the infected Fluids into the groſſer Circulation, Life might either vaniſh in the firſt Stage of the Diſeaſe, or tedious * nervous Debilities enſue.

But ſuppoſing it poſſible, merely for Argument's ſake, that all Inflammation and Eruption could be prevented in this Manner, without any fatal or unhappy Conſequence (which BOERHAAVE theoretically conceived, but was too judicious to attempt in Practice) this would by no means prove ſatisfactory either to the Patient or Phyſician: or at leaſt, not untill a long and undefeated Experience had demonſtrated this wholly ineruptive Infection to be as effectual a Security from a future one, as the uſual Eruption and regular Proceſs of the Small Pocks, whether received by Accident or Art. What might be done to an inoculated Convict, in Order to diſcover

* See P. 89.

cover a Specific for the Diſeaſe or an Antidote againſt its Contagion, is a very different Conſideration. But where the Patient is *ſui juris*, and has a Right to his Life, I conceive an After-Preparation would be ſubtilizing too curiouſly and too dangerouſly. I was informed however in *Paris*, that Dr. TRONCHIN of *Geneva* gave his inoculated Patients ſome white Powders frequently each Day after Inoculation, untill they ſickened. I had no Reaſon for receiving this Information with the ſtricteſt Dependence; nor did the Informer pretend to know the Name or Quality of the Powder. Suppoſing the Fact, perhaps they might have been very minute Doſes of the *Magneſia alba*, or ſome nitrous Preparation, full as indolent, or rendered ſo, by ſome wholly harmleſs Addition; and might have been exhibited as much at leaſt from Parade and Policy, as from any real Indication. The late Accounts we have had from *Philadelphia*, of the inoculated taking 3 Doſes of *Calomel* and *diaphoretic Antimony*, followed with 3 of *Cornachini*, beſides Powders, *&c.* from the Night before Inoculation unto the uſual Time of ſickening, ſeem more dangerous. They tell us however, that all but one out of 700 recovered; which I ſhall be both glad and ſurprized to find verified paſt all Doubt. As the Hint muſt have been taken from *Boerhaave*'s Notion of a variolous Antidote, ſuch a Succeſs muſt do great Honour to his Memory; and effectually cure Dr. HAEN's Averſion to a *Modicum* of *Mercury* in preparing for this Diſeaſe. But

untill we have more authentic Vouchers in this important Matter than a remote and common News-paper, I ſhall not heſitate to declare my Opinion, —— That there is ſomething abſurd and prepoſterous in this Attempt of *ungiving*, as it were, a Diſeaſe we have juſt imparted: when the Indemnity from a ſecond Viſitation of it is expected by all rational Phyſicians, only from the regular Proceſs of the Diſeaſe, through the mild, but natural, Operation of the Cauſe, which they have communicated with their beſt *Precaution*; this very Word implying ſomething *previous*, not *ſubſequent* to an Attempt or Action. Indeed this Officiouſneſs, which may naturally ariſe from the Inoculators great Anxiety about the Conſequence, ſeems to make too high a Compliment to their own over-rated Abilities, and to pay too ſlight a Regard to the exquiſite, the awful Mechaniſm and Motions of the vital Machine; which *Hippocrates*, with a very imperfect, if any, Notion of the Circulation, termed *Nature*, and pronounced to be the Curer of Diſeaſes. And it is ſeriouſly to be apprehended, that thoſe who aſſume ſo arbitrarily to controul theſe divinely formed and regulated Movements, are often the very Perſons who are the moſt likely to perplex their Directions, and to defeat their ſalutary Purpoſes and Operations. Had Inoculation with its juſteſt Precautions ſucceeded leſs than uſual at *Philadelphia*, which the Paper does not ſuggeſt, it might have been ſome Motive for this Innovation, that carries ſtrong Marks of Crudity, in being directed indiſcri-

indiſcriminately for the good, bad and indifferent Subjects of the Small Pocks, without Regard to different Complexions or Temperaments, or making any other Diſtinction, but that of the different Doſes for Children and Adults. Nevertheleſs, having thus averred my own Objections to it, I * give this ſtimulating, evacuating, confuſing and unremitting Courſe of Phyſic at the Bottom of the Page, with this infallible Prognoſtic — That if it does not make the Patient worſe, it will ſeldom diſagree with his Apothecary.

Notwithſtanding I have had the Pleaſure of finding this Section in its firſt Edition, particu-

 larly

The Method is this, the Night before you inoculate, give a few Grains of Calomel, well levigated, with a like Quantity of diaphoretic Antimony, unwaſhed, proportioning the Quantity of Calomel to the Conſtitution of your Patient; from four Grains to ten for a grown Perſon, and from one to three for a Child, to be made up into a Bolus, or Small Pill, with a little Conſerve of Roſes, or any common Syrup. The next Morning give a Purge of the Pulvis Cornachini, made with equal Parts of diaphoretic Antimony, Scammony, and Cream of Tartar. Repeat the Bolus or Pill three Times, that is, once every other Night after Inoculation, and on the fifth Day give a Doſe of Boerhaave's Golden Sulphur of Antimony; about four Grains of it for a grown Perſon, with two or three Grains of Calomel, made into a ſmall Pill, will operate both as a Vomit and Purge at the ſame time.

In the intermediate Days, give two or three Papers of the following Powders, viz. diaphoretic Antimony, ten Grains; Sal Prunel, ſix Grains; and Calomel, one Grain, mixed together, for a grown Perſon; and about one fourth Part of a Paper for a Child. Theſe Powders are to be continued until the Variolous, or Small Pocks Fever is over; and while the Fever is high, let your Patient drink a Cup of Whey two or three Times a Day; the Whey to be made of Cream of Tartar inſtead of Runnet, and thoſe that are of a full Habit, ſhould be blooded once or twice within the firſt eight Days, and muſt abſtain from all ſpirituous Liquor, and from Meat of all Kinds, Broth, Salt and Butter.

Penſylvania Gazette, June 26, 1760.

larly ſatisfactory on the Continent, (a) I am not conſcious of having intended to preſcribe any ways in it to the Conduct of any Phyſician here, whoſe medical Erudition and Experience may equal or excell my own. But as Inoculation has ſometimes been very crudely enterprized, and conducted too independently of their Counſel and Conduct from various Motives; and in very remote, and leſs populous Situations, perhaps oftentimes unavoidably; I have entertained ſome Hopes that theſe Fruits of my augmented Experience and Reflexion on it may conduce to its greater Safety, its more unexceptionable Succeſs, at thoſe extended Diſtances, where the beſt perſonal Advice and Attendance cannot be ſeaſonably procured. For to have diſclaimed conſiderable Experience of, and long Reflection upon it, muſt be falſe and affected; and have rendered this Addreſs to the Publick concerning it abſurd and impertinent.

(a) Il faudroit traduire cette ſection entiere pour faire connoitre les avis utiles qu'elle contient ——— Recueil de Piéces, concernant l'Inoculation. A *Paris* 1756.

SECTION X.

Of the Appearance and Treatment of the Diſeaſe by Inoculation.

BUT ſince the moſt appoſite Preparation, hitherto diſcovered, cannot reduce the inherent Cauſe of this Diſeaſe to the ſame Quantity or Inaction; cannot bring the vaſcular and nervous Syſtem to the ſame Tone or Irritability; nor the Integuments, with the Glands and Ducts terminating in them, to the ſame Stricture or Laxity in all Bodies, it neceſſarily follows, that a different Proportion of Eruption, attended with different Symptoms, or various Degrees of the ſame, muſt happen to a Variety of inoculated Subjects. A Power of effecting the contrary were eaſily extendible, perhaps, * to the Eradication of the inborn *Fomes* itſelf, whatever it may be, with all its humoral Attachments, which muſt render Contagion inoperative, and Inoculation ſuperfluous. Yet tho' we find Preparation and Inoculation neither to effect this, nor to alter

* See P. 45, 62.

ter the eſſential Nature of the Small Pocks; (which if they did, the Operation might be no ſubſequent Protection from it) they very generally produce a great Mitigation of the Symptoms, and an Abſence of ſuch as precede the confluent Diſeaſe. The violent *Lumbago* particularly, ſo frequent a Fore-runner of that Confluence thro' which ſo few emerge, I never knew occur to the Inoculated, under the greateſt Eruption it has been my Lot to ſee upon them. Their Pains are much oftner about the *Scapulae*, Breaſt, *&c.* and rather heavy and wandering, than ſharp and fixed. I have known the Fever on Invaſion pretty acute from Inoculation, but rarely mount to a high *Delirium*, which it often does in the natural Diſeaſe, even tho' a diſtinct Eruption enſues. This ſeems to intimate that the internal *Carotids*, and the Baſilary Artery, branching into the Brain and its Membranes, are not much loaded with a very irritative infected Blood. And as the Inciſions, juſt before ſickening, always itch more than uſual, and ſometimes very conſiderably, it looks as if this external Stimulation had a particular Tendency to invite the more irritative Particles, into the more external Parts of our vaſcular Syſtem.

It is not unuſual for the Inoculated to complain at firſt of a Giddineſs, inſtead of the ſevere Headach, that ſometimes attends the natural Diſeaſe. A Daughter of my own, of ſix or ſeven Years old, was invaded at the uſual Term after Inoculation with a ſlight *Vertigo*, and aſked me, if Peo-

ple

ple that were drunk were not ſo? She had ſcarcely any other Complaint, a ſlight Fever, and about forty Puſtules.

Children are apt to doze much before Eruption, and to have a warm dewy Moiſture on their Surface, which is preparatory to Eruption, and generally a benign one. There is a frequent *Nauſea* too, which terminates for a Time, in puking when they drink, or move out of a decumbent Poſture; after which they generally ſay they are much eaſier.

Such Fluſhings and Redneſs appear ſometimes previous to, and ſometimes a little after, Sickening, as would give us dreadful Apprehenſions from natural Infection: but it is very uſual for them to vaniſh, and a placid gentle Eruption to enſue. I have ſeen them repeatedly on the inoculated Limb, and if any Part of the Body itches at this Time, which is not uncommon, ſuch Suffuſions are apt to follow even a ſlight Scratching, (a pretty obvious Indication of the State of the Blood then) but they commonly diſappear ſoon, and without any ill Conſequence. Such I ſay I have ſeen, but Mr. RANBY has favoured me with an extraordinary Inſtance of this Kind.

A Child of ſix or ſeven Years ſickened the ſixth Day from Inoculation, with the ordinary Symptoms; but the next Day a univerſal Inflammation fluſhed out all over the Body, accompanied with a quick febrile Pulſe, and a Raſh that gave it ſomething of an eryſipelatoſe Appearance. It was previous to Eruption, and termina-

minated the third Day, before that was compleat. The variolous Puſtules were few, and the Diſeaſe was benign. — It was ſuppoſed in a former Section * the infuſed *Pus* might waſte and expel ſome of the humoral *Fomes* before the actual Formation of the Diſeaſe; and that theſe Fluſhings might be one Method of effecting it. I cannot help conceiving that natural Infection muſt have operated violently on this Subject; and have mentioned this Caſe to prevent Practitioners from being greatly alarmed by any tranſient Efflorescences previous to Eruption, by Inoculation.

Hæmorrhages by the Noſe occur, ſometimes previous to, and ſometimes during, Eruption; eſpecially if the Inoculated are adult and ſanguine, or approaching towards Puberty. Such have generally a certain Tenſeneſs in the Pulſe, a Pain in the Head, and Fluſhings in the Cheeks previous to it; and, juſt before the Eruption, an Itching in the Noſtrils. As it was formerly ſuggeſted, that the irregular Eruption of the *Menſes* in this Stage might be variolous, perhaps it were worth trying, if the Blood from theſe Hæmorrhages by the Noſe would impart the Small Pocks.

Now during any of theſe Symptoms on the Attack, ſuppoſing them in no very exorbitant Degree, I apprehend a judicious Phyſician will preſcribe nothing more than a Regulation of their uſual Drinks and Spoon-meats, if they ſhould have an Inclination to the latter, which is rarely the

* See P, 219. 220.

the Caſe, unleſs the ſucceeding Eruption prove little. But where vinous Wheys are allowed, it may be proper to vary the Strength and Quantity of them in different Subjects and Symptoms, and to order different Drinks in ſome: Thus vinous Poſſets and milky Drinks have already been forbid to thoſe under Hæmorrhages, or where the Patients were very ſanguine, and of that Age moſt ſubject to them. Pippin Tea, Balm Tea, and Barley Water gently acidulated, are proper for ſuch. As I ſuſpect the Blood from theſe Hæmorrhages to be variolated, and conceive no artificial one could withdraw it as ſpecifically, no ſlight one would induce my Conſent to bleeding, in order to check it by Revulſion. Yet if it flowed conſiderably, and the Patient had been ſome time coſtive, a lenient and cooling Clyſter ſhould be injected; and this Symptom is much oftner accompanied with a dry, than moiſt, Belly. But if any Puſtules had appeared and did not ſubſide, or greatly loſe their Colour, and the Pulſe was not low nor intermitting, the Diſcharge would ſeldom be menacing. An * Inſtance has been given, even after Eruption, where it diſſipated that, and *judged* the Diſeaſe, as the *Greeks* phraſe it. The ſame Diſcharge before Eruption had perhaps prevented it.

I have rarely met with a poſitive Indication for Bleeding in the ſickening before Inoculation, where the Patient had been judiciouſly prepared for it. If a raging *Delirium* however ſhould ariſe

* See P. 317.

(which is very unuſual, and ſhould carefully be diſtinguiſhed from a light wandering one) a vehement Pain in the Head, inflamed Eyes, the Patient being of a ſanguine Complexion, adult, or approaching towards Puberty; and no ſuch Itching of the Noſe, as pretty certainly preſaged an imminent Hæmorrhage, Bleeding ſhould be directed, and the Foot certainly preferred for it: after which dry Frictions will be likely to invite a Plenitude of the Veſſels, and an open perſpiratory State of the Integuments there, which looſe Flannel, or Worſted Stockings may further conduce to; unleſs the Heat of the Weather ſhould make them rather inconvenient, from their increaſing the Heat of the whole Body too much, and thence inclining a larger Proportion to the Head, upon the Analogy of variolous Eruption with Diſtillation, already mentioned.

If the *Nauſea* and Puking be moderate, and accompanied with little Pain or Agitation, I ſhould ſcarcely recommend a Vomit; or only ſome warm Water, or light Green Tea to dilute, and diſcharge the irritating Contents of the Stomach. I am apprehenſive that too unguarded a Recourſe to Vomits may tend to preſs up an extraordinary Proportion of the ſtimulating Blood to the Brain. And yet if the Patient were bilious, the Contents puked up conſiderably ſo, and ſomewhat viſcous withal, like the Yolk of an Egg; I ſhould be for directing a Puke of Ipecacuanna, or its Tincture and Oxymel of Squills, with reaſonable Dilution in the Operation, which would be

be the better, if it terminated in a free Stool. But, very generally ſpeaking, this will not be indicated from Inoculation; and to confeſs, what may be erroneous perhaps, I have a further Suſpicion of that Commotion, which may enſue from a Vomit in this critical Efferveſcence of the Blood. The Evacuation, abſtracted from ſuch Commotion, where bilious, muſt be ſerviceable; of which I had a very clear Inſtance in a Gentleman about 23 Years of Age, inoculated June 1759, and born in *Bermudas*. The Puke in this Caſe conſiſted only of a large Draught or two of warm Water, or of ſmall Green Tea. But a moderate *Nauſea* and Puking generally vaniſh upon the earlieſt Eruption.

Opiates are rarely indicated before Eruption is compleat, and ſhould not be given, (which has been already mentioned) 'till indicated from conſiderable Soreneſs, ſlow Suppuration, obſtinate Wakefulneſs, or a *Delirium* from Want of Reſt. If the Patient had formerly taken any, their Agreement or Diſagreement with him ſhould be previouſly known. And this may ſuffice for the Appearance and Treatment of the ordinary Symptoms of the Small Pocks by Inoculation; when the Impreſſions of this Poiſon are chiefly exerted on the Blood, and thence on its Veſſels and the Membranes. But when very different Appearances reſult from its Confinement to the nervous Syſtem, an oppoſite Conduct muſt be equally rational.

It is one advantageous Circumſtance of Inocu-

lation, that whatever Symptoms ſucceed about the ordinary Term of ſickening after it, we run next to no Hazard of miſtaking their Cauſe, which we might, if ariſing from an unſuſpected Infection. But a Miſtake of it in nervous Symptoms might happen more eaſily, and fatally too, than from inflammatory ones: as moſt People, and even ſome Phyſicians, are too apt to recur to Bleeding in all Convulſions, without attending to the various, and even oppoſite, Cauſes on which they may depend; and Bleeding in the former Symptoms might be truly pernicious.

We had already obſerved * the contrary Practice of SYDENHAM in ſuch convulſive Inſults, by giving a Cordial and applying a Bliſter, which is doubtleſs preferable. And yet in my preſent Sentiments, where I found a competent Fever with a pretty firm Pulſe, which did not exiſt before the Convulſion, ſucceed to it; I ſhould be apt to ſuſpend the immediate Application of the Bliſter, from a Suppoſition that the Convulſion had done its Office, and exploded the variolous Particles from the Brain and Nerves into the Blood; the heterogeneous Texture of ſuch Particles in their Cavities ſeeming no inadequate Cauſe of ſuch Convulſions. My eldeſt Son, inoculated at above eleven Years of Age, had a ſtrong Convulſion in the Attack. As he was coſtive a Clyſter was injected, which produced one free Stool. A ſmart Fever aroſe a little after the Fit, and exerted a large Crop of the diſtinct Small Pocks. In the manifeſtly inflam-

matory

* See P. 94, 95.

matory Invaſion of this Diſeaſe Bliſters, and hot Cordials, appear, to me, as ſtrongly contra-indicated as any Thing in the *Materia medica* can be. It ſeems as abſurd as it would be to ſet a Liquor, which was ready to burſt its Veſſel, or waſte itſelf in a diſſipating Fermentation, by or over the Fire to reſtrain it. It is not denied however, that as ſuch Convulſions generally precede the diſtinct Pocks in Children, the Bliſter and Cordial are neceſſary, if the eruptive Fever ſhould not ſoon follow; and if it did, they would be leſs pernicious than in a high ſanguineous Infection and Orgaſm, where they have too often been very erroneouſly applied.

But where the Patient, inſtead of ſuch Convulſion (which Nature may ſometimes uſe as an Expedient to relieve the Nerves, as ſhe does a Fever to depurate the Blood) lay torpid, comatoſe and relaxed, doubtleſs ſpeedy and potent Stimulation is called for. To this Purpoſe a quick Emetic ſhould be got down, to produce a particular temporary Convulſion, which, tho' a nervous Affection, may be contraſted to the former; the Benefit from the Emetic in this State being expected from its Agitation; the very Circumſtance ſuſpected in the inflammatory one, where its good Effects were expected from the bilious Evacuation. Nevertheleſs, if the Belly had been dry for ſome Days here, with a Tenſion of the *Abdomen* and *Hypochondria*, a warm ſtimulant Clyſter ſhould be injected. A ſharp Bliſter ſhould be applied to the Neck, or between the

the *Scapulae*, a generous Cordial ſhould be given; and, if theſe failed to excite the Patient in a few Hours, *Solearia* of Garlick and Salt ſhould be applied, of which I have repeatedly known the good Effects, where Stimulation was neceſſary. Such a Situation however is very rare by Infection in either Way: but as I have ſeen it I mention it, and what appears to me its moſt rational Treatment, if it ſhould happen. This was by natural Infection; a very gentle Eruption enſued, and the Patient did well.

I never ſaw one of the Inoculated in this torpid, comatoſe *Apparatus*; but Fits are not ſo unuſual to them. Such a Caſe has been already * given, where they were very violent, and attended with the Loſs of Speech for three Months, of voluntary Motion for many more. And Mr. RANBY formerly obliged me with that of a Child inoculated at the Age of ſeven. Fits were the very firſt Symptom, which continued throughout Eruption, and during the State of Maturation too, tho' more remiſsly than before Eruption, which was favourable, with a moderate Fever; and tho' the Child continued weaker than uſual for ſix or ſeven Weeks, it is ſince vegete and healthy — As I ſaw neither of theſe inoculated Patients, it is impoſſible for me to compare their different Quantity of Eruption and Suppuration: but as the enſuing Debility of the Nerves was of a ſhorter Duration in this laſt Caſe, we may ſup-

* See P. 89.

ſuppoſe the Blood came in for a greater Proportion of Infection.

It has been obſerved in a former Section, that the ſecondary Fever rarely occurs by Inoculation, and that where it does, the Tumult is, comparatively, ſhort and light. Such a Degree of it I have more than once ſeen in the more adult Subjects of this Practice; and have ſometimes adviſed a pleaſant temperate Cordial; a little genuine Canary alone, or diluted, is a very good one. In Caſe of a long previous Coſtiveneſs I have adviſed ſuch a Clyſter, as would be likely to produce one free Stool, and if a ſecond followed it might not be the worſe. I ſhould be cautious however of producing a Super-purgation at this Time, even tho' the Puſtules were turned in the Face; as I have ſeen ſome, and heard of other, fatal Inſtances of purging being encouraged then, in the natural Diſeaſe, on Dr. FRIEND's Authority I ſuppoſe, but, as I apprehend, without his Judgment. To the writing of this I never ſaw but one inoculated * Patient ſink under the ſecondary

* The Negro Youth mentioned P. 63. N. † of whom it was very remarkable, that being inoculated in both Arms, there was a Circle, or rather an Oval, of full the Diameter of a Crown Piece, round each Orifice, which was entirely free from the leaſt Eruption, and were the only Spots of the whole Surface that were ſo. The Pocks never ſuppurated any where, (though the Patient was not emaciated) but ſeemed dry, and, as it were, huſky; for having ſcratched off ſeveral of them on the Thighs, &c. there was no Appearance of Matter on his Shirt or Sheets. Bliſtering Plaiſters (perforated on Account of the Orifices) were applied over the Circles round each Inciſion. The Skin roſe and ſeparated, but with little Moiſture, ſcarcely even an Exudation. A Negro Woman who had had a Child

dary Fever; where they have, it has probably been much more intenſe than is uſual by Inoculation. But as I am hitherto unacquainted with any other Medicine or Method for the Cure of this, ſometimes, irremediable Symptom, than what may occur to any rational Phyſician; ſo I declare I have very often found little or no Medicine indicated throughout the artificial Diſeaſe; which, whether it promoted or retarded the Practice, might be ſuppoſed to render it very palatable, at leaſt to the Patient. Nevertheleſs re-iterated Purging ſhould never be omitted after the Diſtemper, however contracted; except the Loſs of Motion, or other nervous Debilities, ſhould indicate a very different Treatment; even in which Situation a little Rhubarb might be given once, or perhaps twice, merely to empty the alimentary Canal.

Child or two, and was rather above ſix Feet high, was inoculated at the ſame Time with him in both Arms, and with an equal Doſe of the ſame Matter, had a moderate Crop of a very diſtinct Pock, and did very well. She had, by the Miſtake of an Attendant, taken a Purge directed and marked for the Lad, in Preparation: tho' I do not charge his Miſcarriage to this Miſtake. Some indeed might be apt to argue, that natural Infection (which had killed ſome Children in the Neighbourhood a little before his Inoculation) had acted in this Caſe, from the total Abſence of Eruption near the Inciſions (a moſt ſingular Circumſtance in ſuch a Quantity of Eruption!) which Inciſions ſcarcely ever diſcharged one Drop. But notwithſtanding all ſuch Suggeſtions I aſcribe his Death to this Diſeaſe introduced by Inoculation: and only mention theſe Circumſtances as certain Facts.

Section XI.

Of the perſonal Direction, Adminiſtration and Emoluments of Inoculation, in London, *and in all other great and populous Cities, or Towns.*

THOUGH ſome Miſunderſtandings have aroſe between our eminent Phyſicians and Surgeons here, touching the ſpecific Profeſſion to which the Practice and Emoluments of Inoculation rightly belong; were it very clear that the Community had no Intereſt in the Iſſue of the Debate, I could gladly have declined interpoſing any private Sentiments on ſo invidious an Occaſion; where the moſt impartial Conſideration of the Matter may be likelier to diſguſt each Party, than to gratify either. But ſince we have certain Accounts that the Populace, who were at firſt ſtrongly prepoſſeſſed againſt this Practice, and who ſo rarely ſtop at the golden Mean, are ruſhing into the contrary Extreme; and go promiſcuouſly from different Diſtances to little

Market Towns, where, without any medical Advice, and very little Conſideration, they procure Inoculation from ſome Operator, too often as crude and thoughtleſs as themſelves; congratulating each other after it over ſtrong Liquor, and returning immediately to their ordinary Labour and Way of living: And ſince ſuch Ignorance and Temerity cannot fail to diſhonour and obſtruct this (when rightly conducted) moſt uſeful Practice, by an unuſual Mortality of the Inoculated, a Diſquiſition on the Oeconomy, as we may call it, of Inoculation becomes ſeaſonable and neceſſary.

Here then, while I endeavour at an equitable Survey of the Pretenſions of the different Branches of internal and external Healing, to the ſole, or conjunct, Exerciſe of this Practice in theſe Cities, I ſhall conſider them in that juſt Subordination to the Public Health, to which they ſhould both be rendered as ſubſervient as poſſible, and find the private Emolument of each proportioned to their Public Utility; a Point in which every good Citizen, of every Profeſſion, muſt concur. As far as I am capable of penetrating into my own Intentions, I can truly aver, that identical Practice of Inoculation, which would moſt durably and effectually conſult the Health of the whole Community, the whole Species, with Regard to this Diſeaſe, muſt fix my Suffrage. Nor can I diſcern much Merit in ſuch a Determination, as muſt conduce to the inward Satisfaction, that moſt durable Intereſt,

of

of every truly reflecting Man; who cannot be ſuppoſed to put all the Wealth and Honour, that might accrue to him throughout a precarious and fleeting Life, in Competition with the Conſciouſneſs of a diffuſive Benevolence to his living Species, and the Contingence of his poſthumous Services to their Poſterity.

It has been already premiſed, that the certain Author of this great Diſcovery had been hitherto undiſcoverable; and that the firſt Hint might be caſual, which is not improbable of that analogous Operation on Trees, from which it is named; not without a happy Reſemblance between the Melioration of the Fruit, and Mitigation of the Diſeaſe. As the Profeſſion then of the Diſcoverer, which might be fancied to confer ſome Right, is uncertain, ſo is the Sex too. But were Poſſeſſion in ſuch a Caſe to infer Right, we know that a Phyſician or two found as many Women in the Exerciſe of it; the Doctors informing themſelves, and us, from theſe Matrons, but not without ſome improving Hints of their own. I would by no Means infer from hence ſuch a ſtrict Coalition of Phyſic and Anility, notwithſtanding a few modern Specimens of it, as to inveſt them jointly or ſeverally with an excluſive Right to the Emoluments of Inoculation. But to be very ſerious, a Reflection on the probable Qualifications of theſe early female Inoculators may admoniſh any Perſons, who are too zealous to incloſe the Common, that ſuch Zeal has a natural

Tendency to lay it ſtill more open. For if illiterate Women in *Turkey*, and Negroes in * *Africa*, can ſafely diſpoſe for, effect, and conduct Inoculation, which is reaſonably atteſted, the obvious Inference will be — Who cannot? And accordingly we find the Claim not wholly dropt by Perſons of both Sexes, who, in Reſpect of Phyſic, Surgery, and Pharmacy too, may be conſidered as utter Laïcs. We have mentioned the Proprietor, who was a Planter, inoculating his 300 Slaves, at St. *Kitt*'s, himſelf, *ſuis ipſe manibus*, as Dr. MEAD ſays. Mr. DANIEL of *South Carolina* inoculated forty, of whom one miſt taking. Dr. JURIN had informed us long before this, that Mrs. RINGE inoculated four at *Shaftſbury*, and Mrs. ROBERTS five near *Leiceſter*; nor have we the leaſt Intimation of a ſingle Miſcarriage among them all. In brief the equal Simplicity and Succeſs of this Practice refers a truly reflecting Mind to the Goodneſs of Providence, in making, what may be ſo often neceſſary, ſo eaſily attainable; and bids us eſpecially apply to our own Species, what has been obſerved of the whole animal Creation — 'Nature's Children all divide her Care' — That the Procedure of human Love is ordinarily much more contracted proves the Foundation of the preſent Miſunderſtanding between the different, tho' collateral, Profeſſions; and is a Source of the frequent Want of Candour and Liberality between Members of the very ſame.

But

* See *Colman*'s Narrative, P. 35.

But having juſtly ſpecified theſe many ſucceſsful Inſtances of popular Inoculation, as it may be termed perhaps; if there be any Force in what we have ſaid on the frequent Expedience, and occaſional * Neceſſity, of Preparation, the Advice of ſome ſkilful and honeſt Auxiliary muſt be as frequently prudent before Inoculation; and the plain Queſtion is, what Profeſſion is then auxiliary? which as plainly anſwers itſelf. For tho' I have no Doubt of many ſenſible and experienced Surgeons or Apothecaries, preparing different Bodies to better Purpoſe, than as many merely nominal Phyſicians; yet this is deſcending to the Talents and Opportunities of Individuals, which will greatly vary; and not diſtinguiſhing the different Attainments, that are the ſpecific Objects of medical, chirurgical, and pharmaceutic Purſuits: as we muſt ſuppoſe, *caeteris paribus*, each Perſon to be moſt knowing in that Branch he has ſolely purſued. PYLARINI ſays, that Inoculation being duly applied, and in Bodies properly prepared by a ſkilful Phyſician, proves abſolutely ſafe; and concludes, that this indeed ſhould be reckoned of very great Conſequence, in order to bring the Diſtemper to a ſafe and happy Iſſue. And doubtleſs a judicious medical Prediſpoſition of the Body, to be inoculated, may often prevent the Neceſſity of the Phyſician's Attendance in the ſubſequent Diſeaſe; and muſt eaſe the unpreſcribing Surgeon, who has made proper Inciſions,

* See P. 284, 285.

ſions, of all Cenſure, in Caſe of an unhappy Conſequence.

When we are prepared however for the Operation, or judged very happily diſpoſed for it, no one has ever conteſted the proper Intervention of the Surgeon, whoſe Office it undoubtedly is, notwithſtanding the Facility of it. And that crude Apothecaries or as crude Surgeons may have done Miſchief even here, I ſuſpect, from having known one of the latter Stamp make ſuch an Inciſion for an Iſſue in a Gentlewoman's Leg, that it diſcharged a full half Pint of Blood before it could be ſtopt; which muſt have formed a notable variolous Ulcer. The Province of dreſſing the Inciſions is plainly chirurgical: but I imagine the Number and Situation of them, ſince there may ſometimes be Reaſons for varying both, to lie with the Perſon, who has more particularly conſidered the Patients' Conſtitution and this Diſtemper: though an amicable Communication between the Phyſician and Surgeon on ſuch Points appears very reaſonable and decent. The inſpecting the State, Conſtitution and Small Pocks of the Subject, the Matter is to be taken from, muſt alſo be the Phyſician's Care; as the Surgeon is to judge of the requiſite Conſiſtence and Maturation of it. The Phyſician is conceived to diſpoſe the Habit into ſuch a temperate State, the Humours into ſuch a mild one, as to afford a good Suppuration. This State we are to ſuppoſe the infuſed *Virus* gradually perverting; but as a free Diſcharge from the Inciſions has been very

very generally thought ſerviceable, the Art of Surgery is to promote it, and chiefly in the moſt ſuſpicious Subjects of the Diſeaſe: the diſtinguiſhing of which Subjects lying again upon the Phyſician, this evinces the Expedience of their frank and amicable Intercourſe, for the Benefit of their common Patient. Briefly, *the proper Diſpoſition of a Body for the Reception of an acute Diſeaſe, and the Treatment of it in ſuch Diſeaſe, are Matters of medical Conſideration. An Iſſue, Wound, or viſible Ulcer are the Subjects of chirurgical Application.*

With Regard to the Share of Apothecaries, as ſuch, in Inoculation; tho' ſeveral of them, I believe, have ſafely conducted many thro' it, it is manifeſt that in preparing the Body for the Diſeaſe, and ſending in Medicines of their own directing in it, they aſſume the Phyſician, in cutting and dreſſing, the Surgeon: when it is very obvious, that the ſtrict and regular Conveyance of this Diſeaſe in *London* is quadripartite, as a Lawyer might term it; where the Phyſician ſhould prepare and preſcribe; the Surgeon cut, infuſe, and dreſs; and the Apothecary faithfully compound for the Party inoculated: to whom they may ſtill be ſaid, as in *Wales*, to ſell the Small Pocks; tho' in more Form indeed, and Forms the Law alſo demonſtrates to be expenſive Things. Whether it happened from the laſt Conſideration, that Phyſicians have been conſulted about a Minority, perhaps, of all the Inoculated, may deſerve their own Reflection.

But

But to whatever Cauſe it was owing, our propoſed Hiſtory of Inoculation obliges us impartially to acknowlege, that tho' the moſt eminent Phyſicians were conſulted at firſt, with Regard to the Introduction and Practice of this Method, there appears to have been a pretty early Diſuſe of them in it. Mr. HOWGRAVE, an Apothecary, who publiſhed his *Reaſons againſt Inoculation* in 1724, at the Cloſe of ſome Reflections he makes on the Death of the EARL of *Sunderland*'s Son, who was inoculated, affirms P. 53 *verbatim*, as follows:

'There are five Perſons ſigned the Certificate [he means of Maſter SPENCER's diſſected Body] 'and not one Phyſician amongſt them. At my 'firſt reading it I thought this very extraordinary, that the Son of the Right Honourable 'the late Earl of *Sunderland*, ſhould not have 'one Phyſician to attend him, or if he had, that 'none of thoſe Gentlemen ſhould likewiſe ſign 'the Certificate. But I have been informed, 'from a moſt undeniable Authority, that after 'this Child's Death, Mr. AMYAND drew up a 'Paper, in which he affirms the Child died of a 'Water in the Head, and not of the Small Pocks, 'and went from a great Perſon, to three of the 'moſt eminent Phyſicians in Town to ſign it, 'but they none of them did. When this or 'any other of my Accounts are called in Queſtion, I ſhall be ready to produce my Vouchers. 'Why the Phyſicians refuſed to ſign it I will not 'preſume to ſay, but I think it is ſo plain of it-

'ſelf,

' ſelf, that I need ſay no more of it.' As we have met with no Contradiction of this in any ſubſequent Writer on the Subject, we muſt conclude, as indeed it appears, that no Phyſician ſigned the Certificate, which it is probable any previouſly conſulted Phyſician would have done for his own Sake. If the Child had any viſible Tendency to ſuch a Diſorder, it ſhould have been removed before Inoculation. Had there been no ſuch viſible Tendency to it, a good medical Preparation might have obviated or leſſened the particular Cauſe of ſuch a ſupervening Fatality. But no ſuch Preparation appears to have been directed for this noble Patient, which makes his Inoculation and the Reſult of it meer *Handy-work* indeed. This Reflection could not but affect his noble Parents with exquiſite Compunction, by whatever Advice Preparation had been neglected or vilified. For though the Child might have died, whatever Phyſician, or how many ſoever, prepared and attended him; yet as it was impoſſible to demonſtrate, that they might not either diſcover and remove his conſtitutional Unfitneſs for the Small Pocks; or have diſſuaded the Operation, if they thought it irremoveable, the Omiſſion of Advice, in a Patient of ſuch Condition too, was imprudent in itſelf; it might be very fatal to the Patient; certainly was diſcreditable to the Operator; and probably proved injurious to the Practice, from more Reaſons, beſides its Fatality in this Inſtance.

It is but too natural to ſuppoſe, that ſo early

a Tendency of the Profits from Inoculation into one Chanel might co-operate with a few Deaths of the Inoculated, to the enſuing Stagnation of it for many years. Every Phyſician, who might approve the Practice, would not be over zealous to promote one, where he found his preparatory Advice towards it excluded; when the generally comparative Mildneſs of the enſuing Diſeaſe oftner rendered his Attendance leſs neceſſary, than that from common Infection. The few Medicines required in Conſequence of Inoculation (and we may ſuppoſe the Operator, when alone, not too profuſe of preſcribing, which may often be very right and convenient) could not diſpoſe the Apothecaries to recommend this Method, except they aſſumed the Phyſician, Surgeon, or both. Where neither of theſe was the Caſe, they would be apt to reflect, with particular Reſentment againſt the Operator, and his Operation, that in the natural Diſtemper either a Phyſician was called in, which of Courſe employed them more or leſs: that, if a Phyſician was diſpenſed with, they were ſent for; or in mild Caſes and poor Patients, ſometimes a Nurſe, at other Times no body was employed, a Surgeon never being recurred to in it, except Bleeding was preſcribed, and very ſeldom where the Apothecary directed it. But ſuppoſing ſuch very alarming Symptoms to occur, that the Patient, the Operator, or both ſhould deſire a Phyſician's Attendance; a right Notion of this Diſeaſe muſt ſuggeſt, that as the greateſt Service done in the natural Small Pocks

Pocks is almoſt ever effected before, or in the Infancy of, Eruption ; ſo in the artificial, the Foundation of a happy Event is to be laid before Infection : ſince there is no other Diſtemper to which the *Principiis obſta* and *ſerò medicina paratur* are more ſtrictly applicable. This, in plainer Terms, the Phyſician might ſignify, eſpecially where he thought a Miſcarriage likely to enſue ; as he would be apt to ſuppoſe, at leaſt, he could have prepared againſt ſuch Symptoms as he could not remove. Such an Intimation would be a very indifferent Cordial to the Patient ; but unpalatable to the Operator ; and, if a Fatality enſued, muſt diſguſt the Friends of the Deceaſed ; while it preſented thoſe who conſidered their Profeſſion as neglected, their Trade as reſtrained, with an Opportunity of indulging their Reſentment.

Thus it appears very obviouſly deducible, that the general Intereſt of Phyſicians and Apothecaries might have concurred, with the Miſcarriages by Inoculation, to fortify and extend vulgar Prejudices, and to leave the natural Diſeaſe to its ordinary Courſe and Havock ; which, while it mulcted the Inoculators, was more advantageous to the former, though it deſtroyed many Subjects, a great Majority of whom, from all moral Appearance, muſt have been ſaved by perſiſting in the Practice. I do not ſuppoſe ſome Phyſicians and Apothecaries might not be ſuch abſtracted Lovers of their Species, as to recommend the very Method they might be no Gainers,

or even Lofers, by: but we are reflecting what the Conduct of a Majority would moſt probably be; ſince different Profeſſions do not cancel, and but rarely affect, the leading Principles of Men. It muſt be confeſſed it was no Merit, no Self-denial in the Surgeons, while Phyſicians declined to cut and dreſs, to be good Friends to ſo friendly a Practice: but, whatever Horror the Reflexion gives me, I am convinced there have been and are Phyſicians, who wiſh it had never reached us. Some of theſe from having vulgar Capacities (to the Misfortune of their Patients) might mean well, though they acted from vulgar Prejudices. But others, who were better qualified, grew lukewarm in the Promotion of what they had thoroughly conſidered, and certainly approved; a Gentleman of this Sort having given me his Opinion, that it was not worth the Time of a Phyſician to attend much to the Subject, as the Practice of it had all fallen into a different Chanel. There might be much Truth in this; and tho' it is alſo true, that a Phyſician has the leaſt Occaſion to be attentive to what he has the leaſt Expectation of being conſulted about; it may be queried, how far a truly reflecting one could acquieſce in his Indifference for the Eſtabliſhment of a medical Practice, he judged eſſentially vital, becauſe it became leſs lucrative to himſelf. Such Faculties and Attainments, and ſuch Integrity, as muſt combine in the truly valuable Phyſician, would diſpoſe us to expect a more ingenuous Conduct. The Integrity and public Spi-

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rit of HIPPOCRATES in declining, for the Love of his Country, all the Wealth and Honours ARTAXERXES proffered him is an illuſtrious Precedent for his Succeſſors: as his laconic Epiſtle to DEMETRIUS on that Occaſion, in which he obſerves, (a) ARTAXERXES was ignorant he prefered the Attainment of Wiſdom to Riches, was ſtrictly philoſophical. But ſuch an Authority may be thought obſolete, or read like a Legend now: as the many Virtues and extraordinary Qualities he * requires in his Phyſician, may make this truly wiſe and good Man ſuſpected rather for a whimſical one, by many Moderns: and doubtleſs as Self-love is the great Principle of human Action, good, as well as bad, Society, upon the whole, have ſome Intereſt in each Individual's natural Attachment to his own.

But even on the Principle of Self-Intereſt, I conceive the Diſſention of Phyſick and Surgery here was deſtructive (which Time may further demonſtrate) of their durable common Intereſt on this Occaſion: ſince to prevent popular Inoculation, as I have been forced to term it, it would have been politic to allow it its full Importance, and to preſerve it in all that Formality which impreſſes the Multitude. For if the Phyſician ſhould make ſo ſlight of the Operation, as to ſay any Body might do it, and the old Woman had; the Surgeon might as truly retort, that ſhe had alſo pre-

(a) Βασιλεὺς Περσεῶν ἡμέας μετεπέμψατο, ἐκ εἰδὼς ὅτι λογος ἐμοι σοφιης χρυσε πλεον δυναται. Ex Edit. Foeſii. p. 1272.

* See his Treatiſes *de Medico, et de Elegantia.*

prepared them, and conducted them through the Diſeaſe without Phyſic, for any Thing that appears to the contrary. It muſt be left to the Election then of thoſe to be inoculated, or of their Friends, to determine, whether they ſhould retain both of them, but one, and which; or whether they ſhould re-inſtate the old Woman again, and let the Nurſe be a *Succedaneum* to them both. Nor is it unlikely that, from moderate Circumſtances in ſome, and unneceſſary Frugality in others, the good Lady might have a frequent Preference. I frankly acknowlege my own Opinion, that, even thus circumſtanced, Inoculation would be uſeful to the Publick, upon the whole, ſince many had better be inoculated by any one than have it omitted: yet conſidering the great Number of rich Conſtitutions here, ill diſpoſed for this Diſeaſe; the Neceſſity of correcting ſuch ill Diſpoſition; and the Inability of the moſt ſenſible Woman to correct it (who might be the leaſt forward to aſſume it too) the Miſcarriages that muſt be multiplied in a little Time, by a Miſapplication † and ill Mananagment of the Practice, would either extinguiſh, contract, or other-

† Our Readers have probably had but little Satisfaction from the Effects of popular Inoculation in *South Carolina* in 1760. Beſides a very ſenſible Lady of great Veracity has aſſured me, that her Father (a Gentleman in Kent) ſent his Servant *Silvanus Smeed*, aged 21 Years, to Mrs. *Chapman* an Inoculatrix at *Heartfield*, thirteen or fourteen Miles from his Houſe to be inoculated. He had rode there September 5, 1758, and arrived exceeding hot and fatigued, having taken ſome preparatory Phyſic at his Maſter's. His Doctreſs deſired him to prepare immediately for the Operation, which

otherwiſe revert it into the medico-chirurgical Chanel it firſt flowed through among us. And indeed after the moſt cool and impartial Reflections in my Power on this Occaſion, it appears reaſonable to me, that this very Conduct of it here, is likely to be attended with the feweſt Miſcarriages; which, beſides their immediate Advantage to theſe Cities, will be pregnant with that of a more extenſive and more experienced Eſtabliſhment of the Practice; while it ſeems the faireſt Diſtribution of the Employment attending it amongſt Phyſic, Surgery and Pharmacy, which may be of ſome ſubordinate Import to the Public too. Nevertheleſs I would always gladly ſuppoſe, that 'till the Fund of the Inoculation Hoſpital is ſufficient to receive all proper Objects of it, there will be Phyſicians and Surgeons of ſufficient Humanity, to ſuffer no one who prefers Inoculation, and can make a Shift to accommodate them-

which he very prudently deſired her to defer, as improper immediately after his Journey, and in ſuch a Heat. This ſenſible Propoſal however unfortunately did not agree with the Judgment of his Operatrix, who reply'd, he muſt be inoculated that very Day, *Tueſday*, or ſtay untill the following *Tueſday*, that being her lucky Day. The poor Fellow not caring to delay it a whole Week, and taking the old Woman's Reſolution for the Reſult of her Skill, or perhaps of her Conjuration, gave up his own plain Senſe to her Superſtition, and being then inoculated, died of a violent Degree of the Small Pocks. Doubtleſs this Woman's Practice in the Diſeaſe was as extraordinary as her Manner of timing it. Tueſday is very probably out of Credit with her ſince: and if her good Neighbours ſhall find her in ſufficient Employment with implicite Obedience enough, it is to be apprehended her increaſing Experience will furniſh her with more of the ſame Reaſons for diſcarding every Day in the Week: and afterwards diſpoſe her, like a right claſſical Witch, to operate only by Moon-light.

themſelves under it, to want its proper Application, for Want of Ability to pay for it. And this may be the rather expected, as the Attendance very eſſentially neceſſary will be generally ſmall, and the Medicines ſo few, that any conſiderate Apothecary, who would, on ſuch Occaſions, reduce them to twice the prime Coſt, could not fail of being thankfully paid for them.

But if it be the durable Intereſt of Phyſic and Surgery, in *London*, not to depretiate this Practice by any future Animoſity about it, it is manifeſtly for the Honour of Perſons, whoſe Conduct, like their Profeſſions, ſhould be liberal. If BARTHOLINE, in addreſſing his Brother, a Civilian, could obſerve a *communis nexus ſcientiarum*, as ſome Connexion between Law and Phyſic, how much cloſer muſt that between Phyſic, Surgery and even Pharmacy be, which were both (or all perhaps) profeſſed by HIPPOCRATES, CELSUS and many famous Antients; are at preſent united in ſome very eminent Men abroad and at home; and in many Places neceſſarily combined to the Convenience of Numbers. Then beſides the inconteſtible Utility of Surgery (whoſe Diagnoſtics are often more evident, whoſe Prognoſtics ſometimes leſs conjectural, than thoſe of internal Diſeaſes) an ingenious Surgeon, or very ſenſible Apothecary, might have an intellectual Superiority of me, which my different Attainments might not counterbalance. But where this were otherwiſe, with Reſpect to other Phyſicians, methinks there is an odious Impoliteneſs

liteneſs and Illiberality in aſſuming the utmoſt, which the beſt Talents and Attainments may, with ſome Juſtice, claim. Various and odd Characters there certainly are in human Nature; as one of which there may, however rarely, occur a Combination of Pride and Science. Such I have heard of; but am inclined to conſider them only as a few Exceptions to the more general and amiable Union of Science and Modeſty. The former ſeem to me incumbered with ſome Miſ-apprehenſion of themſelves, or ſome Miſtakes concerning Science; ſince a conſiderable Portion of what we call ſuch appears neceſſary to let us into the ſuperficial Quality of our deepeſt. In fine, in Profeſſions ſo contiguous, and ſo antiently united, a few ſlight and reciprocal Incurſions would be overlooked now and then, from particular Accidents, or from the Swarms in either ſtretching them a little out of Bounds; for the moſt uſeful Profeſſions, like the richeſt Paſtures, may be overſtocked. But in a general Invaſion both Parties would do well to recollect and apply the Fable of ANAXAGORAS concerning the Origin of Love, which ſuppoſes, 'That both the Sexes were at firſt completely blended in one animated Body; but that being afterwards diſtinguiſhed into two, and ſeparated by the Will of Fate, the former Halves became very ſolicitous to find each other out, and reſume their primitive Union.' Now perhaps ſuch a Coalition of theſe two Profeſſions here would be of little Advantage to either: but it will admit of no Debate, whether the Publick

muſt not be leſs compleatly ſerved by them in their conjoint, than in their diſtinct, Capacity; a Point of much more general Import, than a little Shifting and Variation of Property between the two Profeſſions, or any Individuals compoſing them.

Indeed for ſeveral Years paſt ſome eminent Phyſicians in *London*, *&c.* in Reſentment of the Surgeons' Incroachment on the medical Conduct of this Practice, for an Incroachment it indiſputably is, have made the little Scratches or Inciſions themſelves, which muſt have been very generally to the greater Satisfaction of the Inoculated: And ſome Phyſicians have averred, on this Occaſion, that were they to deſtine any of their Sons to the Practice of Phyſic, as it is now conducted in *London*, they would make them learn and practice Surgery too, that they might have an equal Chance with the preſcribing Surgeons. Now were Phyſicians' Sons, deſigned to practice here, thus doubly qualified, there is no Doubt but the Cuſtom would become general. This may deſerve the Attention of Surgeons in *London*, as it would in a few Years overſtock the Company for thoſe Branches of Operation and Application, in which the Phyſicians have never hitherto attempted to incroach upon them. But the Group, in any Profeſſion, ſeldom look beyond themſelves; and are too apt to diſguiſe ſuch a Conduct, as is far from being liberal, and is often unjuſt, with the plauſible Name of *Induſtry*; which is certainly a Virtue within its juſt Bounds,

Bounds, though its Extremities ſhoot inſenſibly into a kind of Rapine, and that moſt ſordid Vice, which the' Apoſtle ſtiles Idolatry. But as my own moſt moderate Portion of this aſſiduous profitable Virtue ſecures me from all its Exceſſes, and even excludes me from a few of its juſt Advantages; my Sentiments on this Occaſion, to the beſt of my Knowlege, do not ſpring from a faſhionable Attention to one Individual, nor even to one Profeſſion, but are the pure Reſult of what appears to me likely to be the moſt ſecure Conduct, with Reſpect to Inoculation, of the Inhabitants within the weekly Bills: and perhaps in the *future*, could ſuch a Conſideration operate as it ought, would prove the moſt politic (being certainly the moſt honeſt) for both the Profeſſions. In *Sweden*, where this Method is happily introduced, the Direction of it is reſtrained ſolely to Phyſicians. In *France*, where it has been eſſayed with ſome, tho' not an unexceptionable, Succeſs, if it ever be eſtabliſhed, it certainly will be on the ſame Regulation; and ſo doubtleſs, wherever it ſhall be generally admitted on the Continent. Indeed their ſmaller phyſical Fees may be one Circumſtance conducing to this, tho' far from being the principal one. But ſhould our larger Fees be contracted, from whatever Conſiderations, it is probable the Price of Surgery muſt ſink in Proportion; eſpecially if all Phyſicians commence Surgeons too.

Thus far of the Oeconomy of Inoculation within theſe great Cities and the Borough, where

ſuch a conſiderable Proportion of the People of *England*, and ſo very important a Part too, frequently reſide; that when they were much leſs extended and populous, the Crown thought fit to conſtitute a College of the Faculty, as Guardians of the Public Health, and Judges of thoſe Qualifications requiſite to be intruſted with the Care of it, within certain circumjacent Boundaries. The ſame Manner of conducting Inoculation muſt be ſimilarly adapted to other large and populous Cities, where the Multitude and Wealth of the Inhabitants are ſufficient to employ and ſupport the Profeſſions diſtinctly: from which Circumſtance we find the moſt eminent Members of each frequently recurred to, at great Diſtances from the Metropolis; People naturally conſidering ſuch a Diſtinction as productive of great Experience, and more conſummate Accompliſhment to each, in their different Profeſſions: which ſometimes extends ſo far, as to give Individuals a Preference in different Diſeaſes, and for different Operations. I have had the Pleaſure, during this Impreſſion, to find theſe Motives for ſeparating the Profeſſions of Phyſic and Surgery in large opulent Cities, ſo very ſimilar to thoſe ſuppoſed by Dr. MIDDLETON the Motives for ſeparating them in antient *Rome*, that I have refered to the Paſſage (a) below; as it ſhews

(a) Imperatorum autem poſtea temporibus, cum Civium ſimul et Medicorum multitudo in immenſum quaſi excreviſſet; atque in Urbe opibus omnibus abundante, vel *quælibet Medicinæ pars* vectigal, quæſtumque ſatis amplum profitentibus conficere valeret, tum

ſhews the ſame Cauſes will generally operate to the ſame Effects, in very diſtant and different Times and Places.

But when we come to remote and ſmall Places, to thin and young Settlements, within the Britiſh Dominions, the Direction of Inoculation muſt neceſſarily vary. And as People thus circumſtanced can ſcarcely be as well aſſiſted as the former, it is certain I ſhall miſcarry in a conſiderable Purpoſe of this Treatiſe, if it ſhould never reach ſuch, or prove of little Uſe, tho' it ſhould. We are not without Inſtances here and abroad, of Crudity and Miſconduct in the Application of this great Diſcovery. It has been miſapplied to remove ſuch an ill State of the Blood, as indicated its own Removal, * before the Patient could be a

tum primum in partes varias ſecari quaſi, et dividi Medendi Ars; tum ſingulæ deinceps a ſingulis tractari et adminiſtrari; tum vel maxima quæque corporis pars, certuſve quilibet dolor *Medicos ſibi proprios et unice addictos* habere cœpit: atque hinc denique *Clinicorum*, *Chirurgorum*, *Ocularіorum*, *Auricularіorum*, &c. nomina effluxere: quæ tamen uni interdum, eidemque adhuc competere ex Inſcriptione ſupra allata, atque aliis multis liquet.

Dr. Conyers Middleton's Works, V. iv. P. 200, 201.

* One Inſtance of this happened ten or eleven Years ſince to a young Gentleman in the Service of his late Majeſty. He had an inveterate Ulcer in his Leg, in Conſequence of a Kick from a Horſe. Though his Surgeons had gone to the Bottom of the Wound, and found the Bone found, yet, after healing more than once, it conſtantly broke out again, and was of two or three Years ſtanding, when he was adviſed, not having had the Small Pocks, to take them by Inoculation, in Conſequence of which it was hoped, the Ulcer might be entirely cured. He was inoculated, took the confluent Small Pocks, as his Brother informed me, and died. I publiſhed a ſhort Animadverſion on this Caſe very ſoon

a proper Subject for the Diſeaſe. I have been very credibly aſſured, that ſeveral Years ſince a young Apothecary at *Wimborne* in *Dorſetſhire*, after inoculating ſeveral, who recovered in ſpite of his Ignorance, inoculated two Children in the ſame Family, who proving fatally infected, he ſaid, an Hour before their Deceaſe, they were froward and wanted Correction. This requires no Comment. Another Country Apothecary, who has, ſince that, attended a young Gentleman to *London*, to be inoculated under the Advice of an eminent Phyſician, which ſucceeded happily, declared, that on his Return he would inoculate all the Country round him: And indeed if this Adventurer has had that Phyſician's Ability and Erudition infuſed into himſelf from this ſingle Caſe, his Country muſt be obliged to him, when his Intention is equally accompliſhed. Now a few ſucceſsful Inſtances will be ſufficient to convince ſuch a Head-piece, that it may always be done as ſafely and eaſily as ſnapping his Fingers. But if he ſhould not be diſpoſed to take Warning by his Brother of *Dorſetſhire*, he may blunder on juſt ſuch *froward* Patients in his own Vicinage, and huſh them as effectually. And tho' I have no Doubt even of Bunglers doing more Good than

ſoon after in ſome of the News-Papers, ſubſcribed *Philotechnes*; averring, that the Inveteracy of the Ulcer, when the Bone was known to be found, was an Indication, that the Patient's Blood was too foul to receive the Small Pocks, benignly. This was publiſhed in Conſequence of his Death by Inoculation being publiſhed in the *Daily Advertiſer*, and, as the Animadverter declared, becauſe he ſuppoſed, the Publick had a Right to the *whole* Truth.

than Miſchief by Inoculation, upon the whole; yet it is an Alloy to the great Advantage of it, that it muſt be ſometimes committed to the Management of thoſe, who are moſt likely to diſcredit it. The beſt and briefeſt Advice I can recommend to ſuch, as are leſs qualified to profit by a great deal, is, that they would be careful *not to over do*, nor to expect great Effects from much Medicine, when the Diſeaſe is formed: ſince Inoculation tolerably enterprized, and little diſturbed, often does great Things of itſelf. In fact, throughout the general Practice of Phyſic, *Don't be impertinent*, is an excellent Precept, thoroughly digeſted only by a few, and of Courſe but little regarded by many. It refers indeed almoſt ſolely to the Benefit of the Sick; many of whom cannot be qualified to apprehend, how much they may be ſometimes obliged to their judicious and honeſt Phyſicians and Apothecaries (of both of whom we have Room to hope, there are not a few) for the Preſcriptions and Medicines they have generouſly and *thoughtfully* omitted. I would not be ſuppoſed at the ſame Time to intend any general Reflection on Country Practitioners, many of whom I believe to be rational, diligent, uſeful Men; who may have ſeen too much Room for Improvement in others. And this is no more than what ſometimes happens here and every where, in every Profeſſion, and every Branch of it.

Each Country Surgeon and Apothecary, who ſingly undertakes the whole of Inoculation, ſhould inform

inform himſelf carefully of the beſt Conduct in the natural Diſeaſe, from SYDENHAM, BOERHAAVE, FULLER, and ſuch good Authors, if he had not previouſly done it. They will thence, and I hope partly from this Treatiſe alſo, be inſtructed, that, as the Blood is, very generally, in an inflammatory and efferveſcent State on the Invaſion of this Diſeaſe, the temperate *Regimen*, and temperate Medicines, or ſometimes even the cooling *Regimen* and Medicines, are oftner indicated than heating ones, or than ſtimulative Applications. That nevertheleſs, as the Fever and Efferveſcence are inſtrumental to a neceſſary Depuration of the Blood from the Effects of this Contagion, it muſt be obſerved that they are only to be moderated, not extinguiſhed. That particularly in nervous Infections from this Diſeaſe, (which we have recommended to be carefully diſtinguiſhed from * ſanguineous ones) a Fever, which is generally either abſent or deficient, is to be excited or promoted. That however in the mildeſt Subjects of this Diſeaſe, and its gentleſt Degrees, very little Medicine of any Sort is indicated, but Refrigerants very ſtrongly contra-indicated; a remarkable Inſtance of which may be ſeen in the † Note below. Even

* See P. 86 to 94.

† During my Attendance on five young Ladies by Inoculation in April 1748, who were all excellent Subjects for it, and ſickened, on the whole, very mildly, I was ſent for in a Hurry, a little before Eruption, to the youngeſt, between ſeven and eight Years old, who had ſuddenly loſt her Speech, and ſeemed by her Eyes and Looks to be in a low kind of *Delirium*. On my Arrival, ſhe could ſay *no*, but no other Word, and that indiſcriminately to every

Even Phyſicians, who have long reſided in Towns, unviſited by the Small Pocks for many Years, may judge it prudent to refreſh their Memories in the ſame Manner, on the Introduction of it; and to reflect on the different Conſequences of its accidental and ſpontaneous Infection. To ſave all ſuch the Time of reading, and the Expence and Difficulty of collecting, a great deal more relative to the latter Method, is a principal Purpoſe of this Treatiſe; in which, beſides what is profeſſed Compilation, the Au-

every Queſtion; having had a much ſlighter and ſhorter Attack of the ſame kind the Evening before, this being alſo in the Evening. I deſired her Friends not to be frightened, for as ſoon as any Eruption appeared, it was highly probable her Speech and Senſe would perfectly return. I ordered immediately a ſmall cordial nervous Draught, with ſome *Pulvis de Gutteta* and Syrup of Saffron, which the Child took, and, growing warmer ſometime after it, (her Pulſe intermitting very diſcernibly, her Fleſh being remarkably cool before,) She recovered her Speech and Senſe; having next Morning three or four Puſtules fairly out, and but few more afterwards, doing perfectly and ſpeedily well, with all the reſt. The Surgeon who jointly attended, and had made the Inciſions, taking the Preſcription to the Apothecary's (ſince dead) for the greater Diſpatch, was aſked by the Apprentice, in his Maſter's Abſence, if the Child muſt take that Draught, beſides thoſe ſhe took in common with all her Siſters? This Gentleman aſking him then, what Draughts theſe were, and whether Dr. *K*—— had ordered them, who, he might well ſay, had not informed him of any, he was anſwered, they were nitrous Draughts, which the Dr. had not ordered, but which his Maſter had ſent in for all the Ladies to take (from their firſt ſickening) every ſix Hours. Upon this Diſcovery, the Repetition of theſe Draughts was forbidden; and except one or two Draughts with a little *Diacodium*, no other were taken till they were purged after the Diſeaſe. Theſe nitrous Draughts made all the other Ladies ſickiſh at Stomach; and coſt one or two of them a very gentle Puke before the Diſcovery; but had this very menacing Effect only on the youngeſt, who was a delicate and weakly Child.

thor has riſqued many Sentiments (ſome few very novell) of his own; in a Manner perhaps but moderately digeſted and methodized for a critical Examination: Yet as they certainly have the Merit of a good practical Intention; and a ſtill further Conſideration, God willing, may advance them to more perfect Maturity, he is the leſs ſolicitous about any Cenſure that has, or that ſhall, attend them. For as the candid Dr. FULLER ſays, in his honeſt hearty Phraſe, 'No Man qualified for ſuch an Undertaking ought to be ſo weak-hearted as to refuſe it, for fear of a Scratch in his Credit. He is a poor little ſelfiſh Wretch indeed, that weighs his Name againſt the public Good.' To which I may add, that all the *juſt* Reproof they meet with muſt terminate in my own Information, except my own Weakneſs prevent it.

As a Matter of real Import to the Publick, and the only weighty Argument I can diſcover againſt Inoculation, I ſhall cloſe the whole with obſerving the obvious Tendency of it to * diffuſe the natural Diſeaſe: And where this is not already, the Security even of many, who may very wiſely prefer Inoculation, ſeems not to be put into Competition with that of a Minority, who reject it, and are afraid of the Small Pocks. People have, I conceive, an undoubted natural Right to uſe a Method diſcovered by Providence for their own vital Security; but not at the vital Riſque of a Neighbour, who ſuppoſes differently of

* But ſee p. 119. N *

of it. No Perſon then I think ſhould inoculate, or bring the Matter, or *Effluvia* of it, into any Place of Reſort, where the Diſeaſe does not exiſt: Villages are ſaid to have been deſerted, and Markets removed, from the Apprehenſion of it. It is prudent nevertheleſs to prepare for it in an uninfected Place, † which cannot injure the Neighbourhood. And after the Patient is inoculated near any large City, which we may ſuppoſe at ſome times a pretty diffuſe, and, at others, a more concentered, Sphere of Infection; upon his perfect Recovery and retiring for Air afterwards, a Reflection on the ſurprizing and untraceable Progreſs of Contagion would induce a humane Perſon, eſpecially if his Diſtemper had run high, to reſide in no Houſe with any freſh Subjects of the Diſeaſe.

Were this Practice once extended into a Cuſtom of inoculating all, who ſhould attain the Age of five, (excepting ſuch ſickly Children, as ſhould be deemed proper Exceptions to it) the different Increaſe of the People, *caeteris paribus*, muſt be very ſenſible before the Expiration of a Century: and ſome convenient Places and Contrivances would of Courſe be provided for it. But as our Faculties and Tempers, as well as Bodies, are ſo variouſly conſtituted (doubtleſs for the moſt wiſe and harmonious Purpoſes) that the whole People will ſcarcely ever unite in the Admiſſion of it; if there were, at an uncontagious Diſtance from each large and populous Town,

 ſuppoſe

† See P. 318 to 321.

ſuppoſe the Capital of each County, a ſuitable Reception, after the Manner of the Inoculating Hoſpital, that ſhould, when the Small Pocks was in the Town, admit as many as choſe to be inoculated (after they had been duly prepared elſewhere) at a reaſonable Expence: and, which were ſtill more deſirable, to receive thoſe Volunteers who could not pay, (if a moderate Fund could be raiſed in each County for ſuch indigent Natives and Reſidents in it) and to have them well aired for a reaſonable Time after their Recovery, before their Return to their uninfected Places of Reſidence: Such an Expedient, I imagine, prudently executed, might be effectual to the Preſervation of great Numbers, without hazarding the Life, or Health, of any one beſide. But ſo intereſting an Event calls for the hearty concurrent Agency of many; though the improveable Hint might obviouſly occur to any one. In the mean time it will be but charitable and prudent in all Practitioners, to accommodate the Expence of the Practice to the humbleſt Circumſtances of ſuch of their Neighbours, as ſhall not chuſe to receive this Benefit, merely at the public Expence: ſince we may obſerve the Children of many good fruitful Country People are often obliged to ſeek for Services here, or elſewhere; which they have now and then been refuſed, from not having had the Small Pocks: it being ſometimes ſtipulated in taking Apprentices, that their Parents ſhall remove and take Care of them, in Caſe of their being ſeized with it.

SECTION XII.

Containing ſome Reflections on the religious and moral Lawfulneſs of Inoculation.

AS the preceding Sections contain the moſt faithful Account of the good and bad Effects of Inoculation, with which the Experience of others, and my own have furniſhed me; it muſt be wholly unneceſſary to add any further medical Arguments concerning it: ſince after all poſſible Debate on the Practice, ſuch Effects are the Evidence, that muſt determine the Suffrage of each intelligent Reader for, or againſt, it.

But though the medical Objections to this Practice have long been diſſipated throughout the *Britiſh* Empire, by its very general Conſequences, which could not fail in Time to ſettle the popular and univerſal Opinion concerning it, if the People were left to ſee and hear undiſguiſed Facts for themſelves, and to form their own unbiaſſed Reflections on them; yet we have had, a few

Years

Years ſince, ſome religious Objections to it revived by Writers, who, we are to ſuppoſe, thought them well eſtabliſhed, and who eſteemed it their Duty to inforce them with all their Influence: for if they were prompted by any inferior Motives, to the Oppoſition of ſo ſalutary a Practice, at proper Times and Places, they muſt have been either weak Men or worſe. But if they really can make us as certain, as they ſeem poſitive themſelves, that our procuring this corporal Security againſt this perilous Diſeaſe is full of more important Peril to the Soul; I dare ſay that all, who have ſuperadded our religious Belief of its Immortality, to that rational Perſuaſion of it, profeſſed by the beſt and wiſeſt Heathens, will unanimouſly deſiſt applying, or ſuffering, the Practice any longer. For what will it avail to have protracted our Life to the utmoſt Extent of its uſual Duration here (even ſuppoſing that could be the Conſequence of our getting eaſily through this one Diſeaſe) if our Method of effecting it is really diſpleaſing, and appears preſumptuous, to Him, who ſolely can deſtroy the Soul, in which our Life eſſentially conſiſts? What ſhall we take in Exchange for it, as our Saviour ſays? This might perhaps be bartering a bliſsful Eternity for ſuch an Addition to our Span here, as Age and Infirmity muſt render, at the beſt, inſipid, and too generally even burthenſome, and miſerable: whence ſome might think themſelves intitled to murmur againſt Providence, for having granted, or permitted, ſuch inconteſtable Succeſs to a Practice

tice ſo offenſive to Heaven: and for having at the ſame time implanted in us that Paſſion for Life, and that Dread of Pain, of Deformity, and of Loathſomneſs, which may have irreſiſtibly determined us to have Recourſe to it.

On the other Hand, if it ſhall appear, on a fair Enquiry, that the applying or admitting Inoculation, with the beſt human Precautions, and under a proper Frame of Mind, leaves the Soul, whatever the Event of Inoculation be, juſt in the ſame Degree of Security it found it; it will ſcarcely be controvertible, whether that Reaſon our heavenly Father has indued us with, ſhould operate more ſtrongly towards our ſurer Preſervation of Life and Health, with Reſpect to this Diſeaſe; or our ill-grounded Fears and Miſapprehenſions, to the much greater Peril of them. Now as I happen to be ſtrongly of Opinion myſelf, that the Soul incurs not the leaſt Danger by this Practice, I imagined this Treatiſe would be leſs compleat and concluſive, if I did not inform thoſe who are convinced of the vital Advantages of Inoculation, (but who are very piouſly conſiſtent in rejecting it, while they conceive it dangerous to their eternal Life and Welfare) of my Reaſons for this Opinion. Theſe in Truth, as far as I can penetrate into my own Heart, were not originally founded in any pecuniary Conſequences I might propoſe from it (tho' I never affected to diſclaim any juſt ones) but in an immediate Anxiety for the Life of my own Children; and, after an intereſting Demonſtration of its Succeſs in them,

for

for the Security of every Subject of the Small Pocks, throughout the extended Family of Mankind. For this Purpose I have here converted the Preface of the former Edition, (having also some Reasons for prefixing a new one) into the concluding Section of this.

The earliest theological Combatant against Inoculation certainly set out with more Zeal than Knowlege, when, without debating about the Antiquity of the Small Pocks, he came to the Matter at once, and roundly affirmed, the Devil inoculated *Job* with it. "He supposes * his "Disease that Confluence of inflammatory Pus-"tules, which, he observes, is now incident to "most Men; that it might be conveyed to him "by some such Way as that of Inoculation;" and concludes, "that he does not see what can be "advanced to invalidate this Supposition." His calling it a diabolical Operation, the Operators diabolical, *Venefici*, and their Patients Atheists, *&c. &c. &c.* are necessary Consequences of his first Assertion. A very prudent Man would certainly have attended impartially to the general Fruits of the Practice, and have informed himself more exactly about its different Properties than the Rev. Mr. MASSEY did, before he pronounced so peremptorily concerning it. That his Intelligence of it was merely crude and popular is evident, from his affirming it no Security against a second Infection; and his ascribing the Practice of it to the *Turks*, for this extraordinary Reason

* See MASSEY's Sermon, P. 6.

Reaſon too, becauſe they are Fataliſts; when our earlieſt Accounts of it from *Conſtantinople* tell us, "it was practiſed by the *Greeks*, and a-"mong themſelves and the *Armenians*, who are "Chriſtians; and that the *Turks*, as Fataliſts, "rejected it," which happens to be a little more intelligible than their receiving it, as ſuch. But Abſurdities, like Misfortunes, ſeldom come alone. There is little Doubt however, but ſome of his Hearers, and Readers, really concluded the Devil had inoculated *Job*; the Conſequence of which Concluſion may be eaſily ſurmized, at a Time when the Practice was quite new here, the Prejudices againſt it greater, and the Evidence in its Favour much leſs, than at preſent.

Notwithſtanding which preſent Evidence, a Diſſuaſive againſt Inoculation was printed here, 1751; and a Sermon againſt it preached at *Canterbury*, 1753, was alſo printed, without either having been publickly * animadverted on that I have heard of: For my own Part I may with great Truth aver, I can diſcern no juſt Argument, no Force, in the Objections they contain; ſo that the vital Security of ſuch, as might miſtake their Affirmations for Arguments, and their Miſrepreſentations for Facts, is the real Motive of my endeavouring to expoſe their Futility and Impertinence.

The Sermon affirms literally, P. 8, 9. "It will "be hard to produce out of the *huge* Syſtem of

* This Sheet was at Preſs, before Mr. *Bolaine*'s reaſonable Anſwer to this Sermon was publiſhed.

" *hurtful* Inventions ever an Inſtance big with
" *more* Infidelity and Atheiſm, than this of Ino-
" culation." This is the old Device of mixing Heaven and Earth, and indeed Hell too, in the Quarrel; and to cite it appears its ſufficient Refutation. Since, to omit the Importance and Number of the Inoculated, had the Author ſpent a few Minutes' Reflection on the religious and moral Characters of many who have been inoculated themſelves, or employed it in their Families; and who have further promoted the Practice from the moſt generous and diſintereſted Motives; any State of Mind, ſhort of utter Malignity or Diſtraction, muſt have prevented him from paſſing, in ſo ſolemn a Situation, ſo truly unchriſtian a Cenſure on Numbers, who are fully as remote from Infidelity and Atheiſm as himſelf; and who have evidenced at leaſt equal Faculties to diſtinguſh what are, and are not, ſuch. This is *Anathema*, *Maranatha*, with a Witneſs, and not unlike Lord *Peter*'s plain Argument in Defence of Tranſubſtantiation. As it neceſſarily arraigns me, among much better Company, with the Practice of Infidelity and Atheiſm, I muſt aver I conſider it in a very oppoſite Light, without which I had never practiſed nor promoted it. Many, to my certain Knowlege, admit, and others apply it, under a lively Dependance, that they are uſing a Method diſcovered by Providence, for a much more general Preſervation from the Mortality of the Small Pocks, than mere Art ever did, or probably ever will, effect

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in that, or in any other Diſeaſe of equal Fatality. The generally mild Progreſs and happy Event of it conſpire with Religion and Reaſon, to excite the Gratitude and Devotion of the Patient and the Beholders, and induce the revering and honeſt Phyſician to exclaim with *Iäpis* in *Virgil*,

Non haec humanis opibus, non arte magiſtra,
Proveniunt. ——

Indeed could human Penetration in this Life ſurvey and eſtimate the Scenes of Futurity, it ſeems more probable than otherwiſe, that our ſtrong Solicitude for a long Inhabitation of the preſent would ſenſibly diminiſh; whence all Remedies, except thoſe againſt preſent acute Pain, would be leſs attended to. But His ſupreme Wiſdom, who has limited our Knowlege here, tho' not our Hopes, to this Planet, having willed our Reſidence on it for a Term unknown to us, has moſt benignly implanted that ardent Deſire of Length of Days in us, that makes our Duty, our Obedience to his Will, in this one Reſpect at leaſt, the ſtrongeſt Paſſion in our Nature. *All a Man has will he give for his Life.* What Wonder then that he ſhould embrace the faireſt Chance for the Continuance of it? Can it therefore be conſiſtently inferred, that our Exertion of this Self-preſervation againſt the Pain and Mortality of an acute Diſeaſe is irreligious and derogatory to the Honour of God? Or can any one ſuppoſe Him incenſed with us, in ſuch a Situa-

tion, for an Adherence to that Impreſſion He has ſo deeply ſtampt into our Eſſence ; that when Perſons, in Violation of it, becomes Suicides, we ſuppoſe them under an utter Eclipſe of the reaſonable Soul ? And if this be Madneſs, is not the Reverſe conſiſtent with a Sanity of the Mind, and an Obedience to that earlieſt Impreſſion of the Creator ?

But with what ſtill greater Perverſity muſt others aſcribe a vital Diſcovery, that has never been traced up to its firſt human Inſtrument, to the Spirit of Malignity and Falſhood ! Has that evil Principle, whom the Scripture terms *a Murderer from the Beginning*, ſo altered his Nature, as to become beneficent to Men ! And does the wonted *Giver of all good Gifts*, the Inſpirer of all uſeful Knowlege, but ſhew this efficacious Practice to tantalize, or inſnare, wretched Mortals ? Or if it really were the tempting Device of Satan, will He, who has declared himſelf a *jealous God, and in whoſe Hands are the Iſſues of Life*, ſuffer this Device to triumph ſo manifeſtly over that Diſeaſe, which has ſometimes been aſcribed, with others, to his immediate and judicial Infliction ? Doth He, who came *to ſave, and not to deſtroy*, and who bids us *judge of every Tree by its Fruits* (which ſeems unſtrainedly applicable to Practices and Cuſtoms as well as Men) deem us culpable for attending to, and being determined by, the very general Fruits of a Practice, ſo inconteſtably favourable to Life ?

At the ſame Time it is readily allowed, that Self-

Self-Preſervation may and ought laudably to be poſtponed, whenever our Duty to GOD, to our Country, our Friend, or Neighbour, demands the Riſque, and even Loſs of the preſent Life, which is not a Loſs of Exiſtence, but a different Mode, or Locality, of it; and which, when thus dutifully and nobly exchanged, under an humbling Senſe of our manifold Infirmities, may ſo probably be a Change for the better. But expoſing our Lives to a Diſtemper, which, accidentally taken, deſtroys, upon a fair Calculation, full fifteen (and ſuppoſe it were much leſs) for one that fails by this Application of it, cannot appear to any Perſon, of an unwarped Underſtanding, a Duty in any of theſe Regards; where our Death can anſwer no evident good Purpoſe, tho' it may ſenſibly affect, or even prejudice others. *In the Grave none can praiſe* GOD, and the Deceaſed are loſt to every ſublunary Duty and Relation. As to the Impiety that has been ſuggeſted in attempting to elude or ſoften this Scourge of the Almighty; tho' we do not conteſt, but that He may ſometimes inflict this morbid Viſitation, as the Scriptures inform us He has done others (for who ſhall enter into his Counſels!) yet it ſeems highly rational, and no ways irreligious, to infer, that in the ordinary Courſe of his Providence he leaves ſecondary Cauſes to their neceſſary Operation and Effects. Whether we ſurvive to the utmoſt Term, we were formed to exiſt in this State, or abridge it through our own Folly or Intemperance, by Accident or Contagion;

gion; the Creating Cauſe, pre-conſcious of the full and ultimate Completion of his wiſe and gracious Purpoſes in our Creation, moſt probably commits intermediate Events, that appear very important to our narrow Comprehenſion, to the Vicegerency of Nature; and

— ſees with equal Eye, as God of all,
A Hero periſh, or a Sparrow fall.

Yet, as with Regard to our future State, He hath ſet Life and Death, Good and Evil before us, to ſelect, as free and rational Agents; ſo, with Reſpect to the preſent Diſeaſe, He has manifeſtly permitted us to ſee the Evidences of two different Modes and Events of receiving it, and freely left us (as I apprehend for my own Part, with the utmoſt Reverence and Gratitude) to make our reaſonable, and even religious, Option. For ſuch then, as cannot avoid conſidering Inoculation in this Light, it is ſurely religiouſly lawful at leaſt, if not incumbent, to receive and apply it: while they leave thoſe who conceive or embrace very oppoſite Sentiments of it, to enjoy unblamed (and even with an Approbation of their Sincerity and Conſiſtence in abſtaining from it) that Liberty of purſuing the Dictates of their Conſcience, which the Friends of Inoculation think they have a reciprocal Right of doing unimpeached.

But this they are not permitted to do; *they are reviled, tho' they revile not*; and while they conſider

their

their Antagoniſts only as miſtaken, they are charged with Impiety, Infidelity, and Atheiſm, in practiſing or admitting what has been termed, contrary to all Probability, a diabolical Invention. Now Perſons who erect themſelves into ſuch cenſorial Importance; who are ſo ready to tax the Conduct of their * Superiors; and are ſo liberally indued with the cheap and humble Rhetoric of calling Names, ought to have a truly rational Conviction, that when they call Perſons and Practices by ſuch bitter ones, they are not miſ-calling them, by thoſe eſſentially oppoſite to their true Nature and Characters. Were Truth on their Side, would this be *contending for it in the Spirit of Meekneſs*, which indeed ſo frequently accompanies it? But, as the plain Evidence of innumerable Facts are againſt them, has it not a much ſtronger Appearance of perſiſting obſtinately againſt the Truth, with the Spirit of Bitterneſs and Execration? We ſay *Appearance*, becauſe, as He alone who made the Heart can judge of it, we chuſe to credit this Writer with a religious Zeal for what he thinks the Truth on this Occaſion; for if we do not allow his Diſcourſe this intentional Merit, we can certainly allow it none. But a blind Zeal, tho' *called religious*, if it may have deſtroyed fewer than Ambition, has deſtroyed them more cruelly. Thoſe violent Spirits, who, within a few Centuries paſt, committed Numbers to the Flames here, for their conſcientious Adherence to plain Chriſtian Truths; and influenced the like Cruelty on the

* See Sermon, P. 5.

the Continent, to the Deſtruction of many Thouſands, had ſufficient Zeal, ſuch as it was, to plead for it. Indeed without this they muſt have been greater Monſters than *Nero* himſelf, who, we have never heard, pleaded a Commiſſion, even from his Pagan Deities, for acting like a Devil incarnate. How much more probably and amiably does the good Archbiſhop TILLOTSON ſuppoſe Charity the Criterion of Truth in a religious Syſtem! For, however we may be miſled by Names, all Zeal, that is really cruel and uncharitable, is *eſſentially irreligious*. We do not intend here to form a Compariſon between the Opponents of Inoculation and the bloody Anti-Reformers; but to evince the unwarrantable Lengths of a blind intemperate Zeal, which has moſt generally been employed in the Support of Error too. Neither are we diſpoſed to retort the *Deviliſm*, the Anti-Inoculators have aſcribed to us, on themſelves, tho' ſurely it might be done with at leaſt equal Juſtice; ſince next to deſtroying Life ſeems to be preventing an Interpoſition to ſave it.

But what Principle, what Zeal, can warrant ſuch a groſs Miſrepreſentation of Facts, ſuch plain Falſhoods, as this Author allows himſelf in! To give a few Inſtances out of many, he ſays, P. 20, " that Inoculation ſecures us againſt no one Dan-
" ger we are in the natural Way expoſed to;
" affords no one real Advantage that may not be
" had in the common Management of the Diſ-
" eaſe; and is ſubject to many Inconveniences and

" Evils,

" Evils, which, in the regular Courſe of Things,
" we are either quite free from, or but ſlightly af-
" fected with." P. 21, 22, " It may be main-
" tained that Adults, if naturally of a *good Conſti-*
" *tution*, and ſuch as have not impaired *that* Con-
" ſtitution, or are not at the Time under any
" bodily Indiſpoſition occaſioned by Intempe-
" rance or other Vices, have as good a Chance
" for their Life in the *natural*, as Children have
" in the *unnatural* Way, and perhaps a *better*,
" *&c.*" P. 23, " As to the *Cure* which Inocu-
" lation furniſhes for thoſe *Fears* Perſons are apt
" to lie under till they have gone thro' the Trial;
" and the *Certainty* of the Diſeaſe proving in this
" Way *leſs ſevere and leſs mortal*; theſe, tho'
" urged as *ſingular* Recommendations of this
" Practice, ſeem however to be no better than
" *mere* Pretences." P. 26, " There is then moſt
" evidently no one *peculiar*, *real* Advantage
" gained by ſubmitting to this *deceitful* Trial;
" nor any the *leaſt* Security againſt the Dangers
" incident to the Diſtemper in the *natural* Way."

It is ſuperfluous to give any Anſwer to ſuch groſs Miſtakes, or worſe. But we may well query, if the Preacher reflected *where* he ſaid them? and who adviſed, or rather *ſentenced*, him to publiſh them? Yet, to make the Practice ſome Amends for the hard Words he has given it, he has oppoſed it with very tender Arguments. His comparing the Admiſſion of * Inoculation to a Man's conſenting to have his Legs broke, by way of

* Serm. P. 24, 25.

preventing any ſubſequent Fractures of them, which he calls a parallel Caſe, is ſuch a parallel indeed, as would not have occurred to every Body; and is nearly as ingenious as Mr. MASSEY's aſcribing the Longævity of the Antediluvians to their Phyſicians' profounder Knowlege of Minerals and Vegetables. Such pretty Conceits, however, are ſufficient to gauge the Depth of the Fountains they ſpring from.

The anonymous Author of *A Diſſuaſive againſt inoculating for the Small Pocks* is a more reſerved, and, at the firſt Appearance, a more temperate Writer. His having ſome Elegance and Addreſs, and his ſuppoſing the general Succeſs of Inoculation, which he is too prudent to diſpute, have a Tendency to inſinuate him into ſuch Company, as could not digeſt the groſs Contradictions, and coarſe Dialect, of the Sermon. His theological Arguments againſt it, however, are pretty much the ſame; it being founded, according to his Creed, in Preſumption, Turpitude, Malignity, and even Idolatry. But ſurely the hunted Hare, he gives ſo lively a Deſcription of from a *Latin* Poet, is not reduced to more Shifts than this artful Writer is, in endeavouring to enforce ſuch Aſſeverations by any juſt Arguments. There is a great deal of Scripture quoted on the Occaſion, which wants nothing but a right Application. Thus, for his Mottos to the *Parallel between Divine Reſignation and Inoculation* (and Mottos are generally ſelected for being very pat and ſignificant) he has choſen the following Texts, *viz.*

" *He*

" *He that loveth Father or Mother more than me, is not worthy of me; and he that loveth Son or Daughter more than me, is not worthy of me. — He that findeth his Life ſhall loſe it, and he that loſeth his Life for my Sake ſhall find it.* —— *Speaking the Truth in* Love."

Now who diſputes the Truth and Significance of the two former, on the Occaſion they were uttered by our Saviour? the firſt of them declaring the Right which all had to embrace the Goſpel and become his Diſciples, notwithſtanding the Oppoſition of their neareſt Relations; to whom they owed, in all lawful Reſpects, an entire Obedience, and very great Affection: as the latter ſeems prophetic of the enſuing Perſecution, and even Martyrdom, of ſome of the earlieſt Champions of Chriſtianity, to whom I think they were addreſſed, and were exhortatory to their Perſeverance, in Defiance of it. But what poſſible Reference have they to Inoculation? If they could have any, an unprejudiced Reader would be apt to infer, there muſt have been ſome direct and poſitive Text againſt it in Scripture: or, as the Novelty of the Diſtemper and the Practice muſt prevent ſuch an Anachroniſm, ſuch an Error in Time and Date, he might ſuppoſe there was as poſitive a Commandment, not to attempt to ſave, as, not to kill. As to the laſt Text, *viz.* — *Speaking the Truth in* Love, which the Writer may have intended to apply to the Scope and Spirit of his Performance, how reconcileable is this emphatical *Love* with his

——— *careat ſucceſſibus opto*
Quiſquis ab eventu facta notanda putat.

Which, in plain Proſe, expreſſes his pious Aſpirations, that whoſoever takes the Character of Actions from their Events, and repeats them from their former Succeſs, may find himſelf diſappointed! Now as nothing but the ſucceſsful Events of Inoculation could recommend the Uſe of it, this fairly extends the Author's *good* Wiſhes to the Diſappointment, or Death, of any one who ſhall be inoculated, from judging of it by its Event, which is the Caſe of all who are inoculated. Can Inoculation poſſibly have its Origin in ſo much Turpitude and Malignity, as this Profeſſor of Love has manifeſted in this *Latin* Fragment? which he prudently declined putting into ſuch plain *Engliſh*, as we have done for him. His Application is general, and, not to include the Inoculated within the Amplitude of his good Wiſhes, he muſt have expreſsly excepted them. Beſides that either Turpitude or Malignity is much ſuch an Origin or Cauſe of Inoculation, as *Tenterden* Steeple was of *Goodwin* Sands. Now Perſons who thus bewilder themſelves and others in the Mazes of Sophiſtry and Darkneſs; and are at ſome Pains to avoid the ſerene Expanſe of Reaſon and Sunſhine, may be more juſtly conſidered, as *eluding the Truth out of Prejudice*, than as *ſpeaking it in Love*. Indeed the plain Caſe is, that the former Texts are wreſted, like many others, by the Anti-Inoculators againſt the Practice, to infer it malign, and diſtruſting Providence: when the

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Subjects of Inoculation manifeſtly reſign themſelves as entirely to the Diſpoſition of Providence, in ſelecting the ſafeſt Way it has ſhewn of ſubmitting to this Diſeaſe, as the others, in waiting for the moſt perilous: which the former ſincerely think, Religion does not require of them, and which their Reaſon diſapproves.

For my own Part, the more I ſee and revolve on this Practice, the Opinion of its providential Origin becomes more deeply rooted in me. Methinks, if the revering and ſagacious *Hippocrates*, who ſuggeſted the Divinity of a Diſeaſe, had ſeen this, and this Method, he muſt have inferred the Divinity of the Remedy too. The Candour of *Sydenham* muſt have acknowleged the Efficacy of his ſalutary attempering *Regimen* amazingly ſurpaſſed. *Boerhaave*, who lived to approve this Method, had contemplated how to reſiſt the Diſeaſe by ſome Antidote; or to diſcharge or extinguiſh it by an anti-inflammatory depreſſing Proceſs. Indeed the common and rational Purpoſe of this great medical Triumvirate was to mitigate and ſubdue Diſeaſes, by a judicious Subcontrariety of Remedies to the Nature of their Cauſes: and thoſe, who have done otherwiſe, have generally done Miſchief. But untill I heard of Inoculation, I never heard, read, nor could have ſuppoſed, that a direct Application of the contagious Cauſe of a Diſeaſe to the Blood it particularly infects, was the very ſureſt Prevention of its mortal Effects! And thus *Pylarini* tells us, that the *Greek* Woman he found practiſing it had

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no Sort of Notion why it gave the Small Pocks; but attributed both the Practice and Succeſs of it to the Goodneſs of Heaven: the moſt obvious and natural Inference that could occur to a plain uncorrupted Apprehenſion, when ſhe ſaw ſuch a manifeſt Difference between the Conſequence of it, and of common Infection. In ſhort, we ſhall run little Hazard of miſapplying Scripture more for Inoculation, than its Opponents have done againſt it, if we ſay, after reflecting on this effectual, moſt ſalutary, and paradoxical Coalition of the Cauſe and its Cure, *His Ways are not like our Ways*; and then conclude, with the Pſalmiſt, *This is the Lord's doing, and it is marvellous in our Eyes.*

Nor will our few comparative Miſcarriages in this Way conſiderably militate againſt this Concluſion. Had no one ever failed under it, few or none, ſcarcely a *Turk* perhaps, had oppoſed it by this Time; and thus becoming a Matter of Certainty, there had been no Room for Faith or Reſignation in admitting it; which indeed might have led ſome into too high a Conception of their Independency in this Reſpect. The Loſſes we ſee by it, under the beſt Regulation, are no more than ſeem ſufficient to remind us of the ultimate Dependance of the Creature on the Creator in every State; and to convince us of the Shallowneſs of our Inſight, which cannot diſcern the few particular Subjects, whom the gentleſt Mode and ſlighteſt Doſe of this Poiſon, under the beſt human Caution, muſt deſtroy; for *a few ſuch very*

very probably there are: and theſe few may prove more or leſs, in Proportion to the Mortality of the natural Diſeaſe at the ſame Time. But it is a clear Point with me, that no one dying by Inoculation could have naturally ſurvived the common Infection, during the very ſame Seaſon, and under ſtrictly the ſame phyſical Circumſtances, among which I include the Treatment of the Diſtemper. Briefly to expreſs my whole Senſe of this Practice, I have a conſcientious Conviction, that the Uſe of it is religiouſly right for as many as think rightly about it: nor can I doubt that the Union of true Religion and Reaſon is much cloſer than Enthuſiaſm can perceive, or Infidelity will admit. Medically right I muſt affirm I know it to be; in Conſequence of which I muſt think it politically ſo.

But whatever the further Reception of this Treatiſe may prove, I cannot be deprived of a happy Conſciouſneſs, that I have conducted myſelf throughout the whole of it, by as ſingle and as abſtracted a View to the Public Good, as I can conceive it in the Power of a weak frail Man to do. I have received no Aſſiſtance or Information, nor I think, ſcarcely a Hint on the Subject from any Perſon, Manuſcript, or Book, which I have not, to the beſt of my Recollection, duly acknowleged, as in Juſtice and in Honour I ought. So that every Defect, Redundance and Error throughout all, that is not cited in the Treatiſe, are entirely my own; being ſuch an unalienable Property as none will invade, none

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can envy me. The beſt Apology I can make for a good deal of theoretical Reaſoning in it is, that I think it generally points to a rational and ſalutary Practice. But however erroneous any of the Theory may prove, our great Happineſs is, that the Facts are incontrovertible, and eſtabliſh the Practice on the ſureſt Foundation. Plain Events, as I have ſaid in a former Eſſay, appeal to ordinary unlettered Senſe: they ſpeak an univerſal Language, challenge a direct Aſſent, and confound the moſt elaborate Trifling and Obſtinacy.

It is too probable that, from the Drift and Nature of this Concluſion, I ſhall be cenſured as ſtraying very weakly beyond the Bounds of my Profeſſion, by many Readers who have been accuſtomed to ſuppoſe conſiderable Penetration and Learning (but more particularly in Phyſicians) as inconſiſtent with *revealed* Religion at leaſt; even if they ſhould admit them compatible with *any*. In ſuch a falſe and pernicious Judgment, there is too much Reaſon to apprehend, ſeveral have been encouraged, by a few out of the many educated to the different Branches of healing; whoſe own Vices have made ſuch an Opinion a flattering and temporary Opiate to themſelves; and who have alſo found it more lucrative to ſooth their Friends and Acquaintance in Libertiniſm and Diſſipation, than to rectify their erroneous Judgment and Conduct; ſuppoſing ſuch Men could *otherwiſe* be diſpoſed to attempt it. Since a juſt Connection of truly religious, not fanatical, Sentiments, and a correſpondently virtuous benevolent Tenour of Life, which

evidence

evidence the compleateſt Sanity of the Mind, have alſo a direct Tendency to the Preſervation of bodily Health. Now ſuppoſing a Phyſician to be a Perſon of good natural Capacity, with a thoughtful Turn of Mind, and to be well verſed in the various Branches of Knowlege requiſite to his Profeſſion, (all of which it is of ſome public Importance he ſhould be,) he muſt certainly prove as badly qualified for Scepticiſm, in its worſt Senſe, or the Irreverence of any Thing truly ſacred, as I can conceive the beſt Theologiſt to be. The human Body with its Diſeaſes, and every terreſtrial Syſtem of Matter, being the Objects of phyſical Contemplation, all the Evidence of Nature is continually and irreſiſtibly beaming on his Mind the Certainty of one Sovereign creating and preſerving Cauſe of the Univerſe. The Acknowlegment of the Royal Prophet and Poet, that 'he was fearfully and wonderfully made', is a Reflection, that would naturally preſent itſelf to the moſt reaſonable Mind, after an accurate anatomical Survey of the human Body. HIPPOCRATES, in treating of the Qualifications of a Phyſician, ſays, he * muſt neceſſarily be acted (*i. e.* in Conſequence of his Obſervations) by a continual Reverence of the Gods: though he ſuppoſes him at the ſame Time free from † Superſtition and Avarice. Nor is there much Improbability

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* Και γαρ μαλιστα ἡ περι θεων ειδησις εν νοῳ αυτῃ εμπλεκεσθω. Εν γαρ τοισι αλλοισι παθεσι ὑπ' ων συμβαλλομασιν ευρισκεται τα τοιαδε προς θεων ανθρωποις κλιμενη ἡ ἐπιτηδεη. Οἱ δ' Ιητροι θεοισι παρακολουθεσιν. De elegantia.

† Ατεμτοληνσις, ἀσιλαργυριη, ἀδεισιδαιμονιη. ibid ſup. a.

probability in ſuppoſing ſo truly capable, ſo reflecting and attentive a Perſon (though he might not chuſe to publiſh his Diſbelief of the religious Mythology of his Country) to have been ſecretly as ſuperior to Polytheiſm, as SOCRATES publicly was, and as PLATO, TULLY, and ſome other pagan Philoſophers have reaſonably been ſuppoſed. GALEN's Converſion and his Hymn in Conſequence of it, are ſaid to have been the Reſult of his anatomical Reſearches and Reflections.

With Regard to the ableſt modern Phyſicians, as HARVEY, SYDENHAM, BOERHAAVE, FERNELIUS, and perhaps all who have left us any valuable Writings (to ſay nothing of our admirable Engliſh Philoſophers,) they have been animated with the ſublimeſt, the awfulleſt Notions of the Deity: and indeed it would be ſurprizing, if the many modern Diſcoveries in Phyſics did not dilate our Minds, and of Courſe exalt our Conceptions of the Wiſdom and Power of GOD. But at the ſame Time that ſuch perfect Conviction and Reverence accrued from the Inveſtigations of theſe great Men; they experienced ſo many Things ſtill ſecret and inacceſſible to their utmoſt Aſſiduity and Penetration, that it produced an unfeigned Self-Humiliation; which, while it appeared to depreſs, really elevated them to that advantageous Pinacle of human Knowlege, the Knowlege of themſeves. As many as have attained this difficult Height, have rarely been long bad, or eſſentially irreligious Men: though indeed conſiderable Faculties ſeem neceſſary

ceſſary to that juſteſt Eſtimation of themſelves, which immediately directs us to the Adoration of our divine uncreated Origin, that firſt Philoſophy; in which Men of the greateſt Genius and Science among us have ſo readily acquieſced, or rather exulted. It muſt be pleaſing to every well diſpoſed Mind to reflect, how conſiderably theſe out-number ſuch Libertines of Genius and Learning among us, as have not been contented with endeavouring to make themſelves and others eaſy in a licentious and exorbitant Gratification of their natural Appetites; (which are certainly entitled to their proper Objects within juſt Bounds) without exciting a ſenſeleſs and impious Ridicule of thoſe ſacred Principles, that are neceſſary to the true Happineſs of Society in its temporal State.

So thoroughly contemptible, upon the cloſeſt, the moſt intereſting Reflections, are the Pretenſions of Infidelity and Libertiniſm to that Superiority of Underſtanding they inſolently arrogate. Their Profeſſors abſtracting Morality and Virtue from Religion (as ſome Sectaries would ſeparate good Works and a right Faith,) is a Chimera, that fully expoſes their ſuperficial Conſideration. Wherever the laſt is neglected, the former will neceſſarily become depraved; nor could the moſt virtuous pagan Nations have long preſerved their Morals or their Reputation, without ſome religious Syſtem, though it were but a fabulous one, that apply'd to the Hopes and Fears of Mankind beyond the Duration of human Life. This evinces what indifferent Politicians, what perni-

cious Citizens, the Propagators of Irreligion and Infidelity muſt prove; when their Tenets, which diſclaim eternal Happineſs, ſap alſo the temporal Security of each Community, which they labour, it is to be hoped very unthinkingly, to infect with them: ſince it is even for their own Advantage *here*, could they diſcern it, that this eternally intereſting *Palladium* of Juſtice and Benevolence among Men ſhould operate as long as *themſelves* live, and that their Proſelytes ſhould be very few. Their egregious Secret ſhould have been concealed as profoundly as the *Eleuſinian* Myſteries: but in this Reſpect their Cunning has been weaker than their Vanity, which has left them the fewer to laugh at, by their too frequent Succeſs in this execrable Employment. Their moſt profligate Admirers cling to them for the comfortable Hopes they receive of utter Annihilation: while their weakeſt Proſelytes, unable to think, and ſometimes perhaps merely conforming to a vile Faſhion they have not Fortitude to reſiſt, are flattered with a Suppoſition of their commencing Philoſophers, and of their advancing in Time to an equal Profundity with their Teachers. There may be ſome undiſcoverable Wit and Humour; there muſt be ſome Cauſe of Titillation in their Syſtem, for the abundant Laugh and Feſtivity of ſuch Gentlemen. But certainly there can be no Calculation, no common Senſe, in riſquing the moſt remote Chance of a happy Eternity, for the malignant Joy of offending ſerious and revering Minds with Profaneneſs or

Ribaldry,

Ribaldry, which even common Decency forbids; nor in preferring the Applauſe of weak frothy Men, or looſe Moraliſts, to the delightful Tranquillity of a good Conſcience, and perhaps even to the divine Approbation and Favour.

Such, in my Opinion, being the intellectual Merit of this Rank of Critics, my Concern about their Strictures on this Concluſion may be eaſily eſtimated. As I avow my having revolved Inoculation in a religious and moral View, I offer the Reflections that have made me very eaſy in the Practice of it, as ſome Remedy againſt the erroneous Scruples of others. But though I have been aſſured they have ſucceeded ſufficiently with ſome, to have occaſioned the happy Inoculation of their Children, I gladly refer ſuch as may juſtly remain not fully ſatisfied with them, and who underſtand *French*, to the *Eſſai Apologetique ſur l'Inoculation de la petite Verole*, by the Reverend and truly ingenious Mr. CHAISE, Miniſter at the *Hague*; who has conſidered the religious and moral Objections to this Practice in their utmoſt Force and Extent; and anſwered them in ſuch a ſatisfactory and concluſive Manner, that, although it may not ſilence all Cavillers, I think it muſt content every fair Diſputant. It has ſtrongly rivetted my early Satisfaction in this Practice, by affording me ſuch further Arguments as I had not met with elſewhere; and which did not occur to my own limited Reflexions on this Subject. Nothing certainly but very ſtrong Prejudices of Education (except certain political ones may operate

rate at preſent in ſome *German* States againſt adopting any Engliſh Practice) could have continued a Phyſician of Dr. HAEN's Abilities (as ſuch are candidly allowed him by the ingenious Dr. TYSSOT) a violent Oppoſer of the Method, after having read Mr. CHAISE's Apology. For as the Doctor prudently omits many former medical Objections to it; and as there is little Force in thoſe he makes, it is eaſy to diſcern, where the Shoe pinches him. Had this Method been brought into *Europe* by any eccleſiaſtical Member of the Romiſh Communion, we ſhould have had it inceſſantly obtruded upon us, as a miraculous Proof of the Incorruption and Infallibility of their Church. Had the Diſcovery been introduced by a Dominican, it had been urged to demonſtrate the extraordinary Piety and Mercy of the Inquiſition itſelf! In this Caſe perhaps we might, on the other Hand, have been deprived by ſome Zealots at home, of the Benefit of ſo early an Application of it in *England*; tho' Thanks to Providence, this is not our uſual Way of reaſoning here. The whole Apology is wrote with great Perſpicuity, Force and Elegance: but ſuch as wiſh rather for an Abſtract of it, may read the ſtrongeſt religious Objection againſt Inoculation fully enforced in the Words of an anonymous Writer to the Author on this Head, from P. 87, to 89; and the Author's Anſwer, from P. 89, to 101; which concludes his Apology in the Spirit of genuine Piety and Candour.

APPEN-

APPENDIX.

N°. I.

AD

Virum ſpectatiſſimum eruditiſſimumq; * D. SENAC *Regis Archiatrum.*

QUando ea humanitate, quæ viris ſapientiſſimis tam decora et familiaris eſt, me ad aulam excepiſti, pauca quæ tibi dicere vellem ſubticui ; partim ob parvulum temporis quod mihi tunc reſtabat tecum colloquendi ; et partim ex deſuetudine quadam elocutionis latinæ, quam tanta cum facilitate ac elegantia ore fundis. Nullus autem vereor quin pauca hæc urbanitas tua concedat mihi copiam per literas adjungendi ; dum pro candore tuo condonabis quicquid, a libris fere cunctis remotior, vel minus deliberatè ſentiam, vel minus accuratè ſcripſero.

De excitatione variolarum per epiſpaſtica obiter tantummodo memoravi ad p. 157. libelli, quem accipiendo

* Vid. P. 197, 198.

accipiendo me devinctiſſimum habes. Quandoquidem enim in Anglia, et in Americæ parte Angliaca, ſemper expectavimus, atque, ut viſum eſt, non immeritò, aliquid commodi profluxurum eſſe inoculatis, per ſuppurationem inciſionum laudabilem et ſatis copioſam, rariſſime aut nunquam per veſicatoria morbum excitavimus: et ſi quandoque factum eſt, ſemper factum præ horrore puellæ vel infantis ad conſpectum lanceolæ. Dom. Butini, medicus Genevenſis, cum totò fere choro ſcriptorum de inoculatione, ſupponit inciſiones, ut ità dicam, variolatas, quæ bene ſuppurantur, multum præſidii adferre inoculatis. Fateor me ipſum nunquam tentâſſe per veſicatoria infundere variolas, uſque dum Lutetiàs advenerim, ubi applicavimus quatuor parvula veſicatoria duobus ex quinque pueris et puellis, quos Dominus Dux de Rochefoucault curavit ut per artem inficerentur, tanquam totidem exempla commodi ex inoculatione proventuri. Ex imperfectis *excoriationibus* (quum cuticula tantùm, et aliquando rete mucoſum, non cutis per veſicatoria abraditur) puelli et puellæ veſicatorum, ne guttula quidem puris effluxit, ſed exſudatio quædam ſeroſa et valde modica. Et quî aliter fieri potuit, quandoquidem ex maſſâ ſanguinea, non ex ſero ſolùm, pus efficitur. Puer et puella veſicati, unà cum duobus aliis pueris (quos, præter puellam fere octennem, præparavi et inoculavi gratis) in eodem cubiculo febricitabant; puer leviſſimè quidem, nam ad cubile, die durante, raro ſe recepit, et variolas perpaucas,

vix

vix cernendas, et nullatenus ſuppurantes, habuit. Certiſſimus ſum me non potuiſſe ex illo extrahere vel minimam portuinculam ſucci varioloſi, quo variolas impertirem. Omnibus his quatuor credo quod non erumpebant plus quàm quinquaginta puſtulae; ſanctè affirmare poſſum longe infra centum fuiſſe; et omnes cito quidem integerrime revaleſcebant. Qui veſicati erant fuerant juniores quàm pueri inciſi, et pabulo varioloſo certe minùs, et partim fortaſſis ea ipſa de cauſa, praegnantes, quod paulo fuſius innuebam analyſeos p. 257, 258. Pueri inciſi habuere a ſex ad octo plures puſtulas quàm puellula veſicata, ſed bis ſaltem tot annos.

Novi qui imaginantur, quod plures variolae per inciſiones quàm per veſicatoria excitantur. Non poſſum ipſe non diſſentire ab hac imaginatione; quoniam ut aliquis ſe praeſtet ab iteratis variolis immunem, neceſſe eſt ut totum morbi pabulum, quod, ad demonſtrationem uſque, continetur in ſanguine et corpore humano, extra corpus individuum per puſtulas, et per proceſſum morbi, eliminetur. De regimine iccirco et de praeparatione pendebit, ſaltem ex parte, ſeges puſtularum et ſymptomatum gradus; quanquam utraque varia erunt in diverſis corporibus, etiam poſt appoſitiſſimas praeparationes. Si enim per eroſionem veſicatoriam, et morbum exinde inductum, non omnis materia in ſanguine, ut ita dicam, variolabilis, ſed pars tantummodo expellitur; conſequeretur, ut novo inſultui variolarum quilibet per veſicantia infectus obnoxius eſſet, quod nec credo, nec ſpero.

Veruntamen ut me ingenuum praeſtem coram celeberrimo et ſplendidiſſimo viro ſatendum eſt, quòd ſuſpicor ſanguinem non tam plenè defaecandum iri per eroſiones, ubi ſolummodo aperiuntur extremitates glandularum aut vaſorum lymphaticorum, quae nihil puris effundunt, quàm per inciſiones, ubi vaſa capillaria, integro ſanguine gaudentia, inciduntur; et quales inciſiones in cauteria, pus merum meracum fundentia, deſinunt. Ut videre enim eſt in libelli p. 42, 43, &c. ſuppono, in majoricopia inter rubros ſanguinis globulos, quàm inter lymphaticos, deliteſcere ſeminium morbi. Hinc in apparatu ejus non tantum levamen ſymptomatum percipitur per amplam ſeri evacuationem per meatus urinarios, quantum per haemorrhagiam e naribus modicam. Et quare pars veſicata quae nihil effundit puris, quod fit ex ſanguine, ſicut ipſae puſtulae, poſſit minuere ſubſecutivam eruptionem, plus quàm inciſiones, quae pus, de infecto ſanguine confictum, ejiciunt, planè non video, et mihi abſonum rationi videtur. Interea tamen non penitus ignoro omnem meam inſcitiam; abbunde vincor, quod multa in humano ſyſtemate, et in naturae penetralibus, peracta ſunt, quae captum meum, et me multò capaciorum longe ſuperant. Sic demum de factis et exemplis haec quaeſtio pendet, quae nondum hìc loci ſufficiunt ad certum quoddam axioma de re tali ſtabiliendum. Et ſi etiam ſufficerent, inveſtigatio veri ad aliquod tempus fortaſſis eluderetur, niſi omnes inoculatores fuerint viri aperto pectore, qui veritatem famae et auro anteponunt, et candorem verè Hippocraticum redolent.

redolent. Sic autem fatendum eſt, Vir probiſſime, nimis rari apparemus: nimium rari ſunt qui et artem nôrunt, et ſine artificiis eam exercent. Ex hac raritate autem tibi *Apotheoſis* evenire poteſt, juxta Hippocratem, qui dicebat medicum philoſophicum, quaſi deo parem, Ιατρος γαρ Φιλοσοφος ισοθεω.

Londinum per *Oſtend*, Deo volente, citò rediturus, efficiam, ſi potero, apud Epiſcopum *Worceſtrenſem* (cui nuper hac de re ſcripſi) ut plures eadem aetate, eodem temperamento, et, quantùm conjectura aſſequi poſſumus, parili copia pabuli varioloſi praegnantes, iiſdem planè medicamentis et regimine uterentur inter praeparandum: ita ut demum pars media inoculationi per inciſionem ſubjicerentur, pars reliqua infectioni per veſicatoria: unde per talia experimenta, ſaepe repetenda, aliqualis concluſio forté erui poſſit. Vereor autem ne maximus inoculationis per inſertionem ſucceſſus aliquomodo officiat ne impetrarem: aegre enim habeant commutare methodum per quam ſolummodo unus ex fere ſexcentis naufragium fecit. In ſecunda editione libelli, fortè de hoc modo infectionis, quem audivi medicum hìc nuperrime notiſſimum, tanquam propriam ſuam inventionem, aliis venditâſſe, ulteriùs ediſſeram. Sanctè credo illum non eam methodum exercuiſſe, priuſquam meum librum, in quo eam, perfunctoriè tantummodo deſcriptam, legiſſet; nam legiſſe ex longo tempore novi.

Hanc, neque primam, Vir celeberrime, intruſionem, ſpero pro urbanitate tua te facilè con-

donaturum. Mire vellem insuper quod legeres cum candore philosophico paucas eas libelli partes, nam sunt perpaucae, quae manifestant auctorem diversa, licet christiana, fide; ex diverso, et quod dolendum est, hostili regno oriundum. In diversas regiones, religiones et partes, nolentes volentes quasi nati sumus. Proprio Regi, ut aequum et decorum est, fidelissimus, fidem mihi per literas conductorias gratiosissime imputatam nunquam violavi nec violabo. Non lineam, ne verbum quidem scripsi ad *Angliam*, neque ex ea recepi, quod civitati *Parisiensi* non tutò liceret evulgare. Regi, ac legibus regni, quod peragrare concessum fuit, me habui, pro tempore, subjectum: sic me gessi, et, quantùm me novi, non magis ex metu, quàm propter justitiam cum summa gratitudine et reverentia conjunctam. Haec in immensum excreverunt, ex quo inaequandas magnificentias et amoenitates *Versailiarum* videndi copia data est. Quando ipsum Regem, cum augustissima, illustrissima et amabilissima familia, intueri permissum fuit: et cum tandem maxima et imprimis gratiosa Regina, cum illustribus filiabus me coram conspicere, imo etiam quadantenus compellare, non dedignatae sunt. Summa observantia, quam in *Gallis* et debeo et foveo, facit ut ad iter me accingam, antequam dies permissi ad imum defluxerint. Tu verò interea, Vir spectatissime, et eruditissime vale! Salus, quam maximo regi tueris, tibi diu affulgeat; et digneris aliquando, per summum otium, meminisse celebritatis tuae famae,

famae, et ſplendoris tui maximi muneris, cultorem obſervantiſſimum,

J. KIRKPATRICK.

Ex aedibus Belleileanis, Junii 14^mo. 1756.

Not having, nor having applied for, Leave, to print the Latin Anſwer this Gentleman honoured me with, I decline the Liberty of publiſhing it here; though I have extracted a Compliment from it among the Citations refered to in the Preface. The Reply to it, however, was as follows.

Vir digniſſime,

LIteras quibus me cohoneſtare non dedignatus es, ſumma, qua decuit, gratitudine recepi. Et quandoquidem tua benignitas mihi non abnuit honorem te rurſus inviſendi, inviſam, ſi potero intra tempus conceſſum, quod pené effluxit: et hoc praecipue concilio, ut ſi forte librum perlegiſſes, quem tanto candore commendas, impetrare poſſim a tua ſagacitate, eruditione et experientia, deſignationem eorum quae tibi aut erronea, aut deficientia, viſa ſunt: ex quo inde limatior ac utilior editio ſubſecutiva prodeat. Eodem tempore colloquendi dabitur occaſio de iis quae dixiſti mecum agere tibi mens fuit; et de quibus multùm vereor quod vix tibi ſatis tractatus noſter fecerat.

Haec equidem non ſcribo, Vir ſplendidiſſime, quò tibi taedium, aut mihi novos honores, ex tua reſcriptione afferrem: quali etenim ſemel contuliſti abunde ſum contentus. Scripſi verò, praeter cauſas ſupra allatas, ut exhiberem animi gratitudine

dine perciti teſtimonium ; utque profiterer, quod verè poſſum, me, alterius meritum longe ſupra meum, et cumulatiſſimis, ut fas eſt, honoribus ornatum, quàm ſincerè colere et amare : praeſertim quando mihi meiſque conatibus vir meritiſſimus ſe favere non tantum profitetur, quinimo etiam commonſtrat.

Si quicquid rei literariae tibi ex *Britanniis* per *Belgiam* redux, dummodo res ac tempora ſinant, afferre potero, honorificentiſſima mihi erunt tua mandata, quae, meo ſaltem obſequio, merebor. Tui interim animi in me propenſionem benevolam gratiſſimus agnoſco, et ambitione, ſed non mala, amplector : novi enim quàm ſedulo mihi cavendum eſt, ne unquam te patrocinii poeniteat cultoris tui, cum omnimoda obſervantia, addictiſſimi,

J. KIRKPATRICK.

Pariſiis, Junii 22^do^. 1756.

N°. II.

Viro praenobili ac verè digno,

L. M. FOUQUET, COMITI de GISORS, *&c. &c.*

In fauſtiſſimam ejus, annuente ſummo Numine, variolarum Inſitionem.

SAepe * mihi recolo quam *Sequana* perfluit urbem,
Magnificam, celebrem, templa, vireta, vias ;
Verſalias luxu regali auroque tumentes,
Delicias *Marli*, prata, fluenta, ſitum.

Sed

* Vide P. 198. & N *

Sed nulla aeque animum redeunti paſcit imago,
Dum varias vitàe volvo viaeque vices,
Ac quae, penè aequans benefacta auſumque GISORI,
Officium et grates reſpicit apta meas.
Uſque colende mihi, procerum blandiſſime, totum
Qui genus humanum, Marte ſinente, colis;
Accipe, quaque ſoles morum dulcedine mira,
Hiſtoriam haud fictam, diſſimilemve tuae:
Te nati illa legant quorum pars maxima clares,
Quorum, te hortatus, pars, neque parva, fui.

Febris ALEXANDRUM, domito nondum orbe, repreſſit,
Vim *Perſae* audierant, non ſubiere, viri.
Ars medicamen avet tutum, ſolennius; ipſe
Forte citumque petens praetulit omne morae.
† Decepti interea regem monuere tabellae,
Quòd virtute minor, fraude opibuſque potens,
DARIUS multo medicum corruperat auro,
Tendere lethifera certa venena manu.
Verſans multa animo mortem malebat alius
Crimine, quàm turpi degener eſſe metu:
Diſplicet a cunis fido diffidere ſervo;
Jamque dies aderat quo medicata daret.
Annuit ipſe ſibi calicem, medicoque tabellas,
‡ Siccat, et aſpectans ora legentis obit:
Protinus ictu oculi fallacia ſcripta recedunt;
Si quis vera ſilet, vix ſilet ipſa fides.
Ex vultu ingenuo probitas nitet uſque * Philippi,
Pectora plena artis neſcia fraudis erant.
Tandem ingeſta valent ex uſu pharmaca docto,
Rumores Heros ſpreverat, ille febrim.
Debita ſint priſcis praeconia, neve tacendum,
Si tam pulchrè auſum tempora noſtra ferunt.

REGIA,

† Scil. Parmenionis.
‡ Quoad hanc circumſtantiam conferantur
Q. Curt: & *Val. Max.* cum *Arriano* et *Plutarcho*.
* Alexandri Medicus.

Regia quà fulget late armipotentis, et hortus
Cultior, irriguus fonte perennis aquae,
Desinit in sylvam, moderato lumine, gratam,
Divisam in varias undique mille vias;
Quà Charites, quà ludit Amor, peramoena locorum,
Sequana mirantes rite moratur aquas.
Haec juxta oppositus, virtute et sanguine praestans,
Unica Belliliae spes columenque domus,
Quod ‖ vitam patriae mallet quàm tradere morbo,
Principia elegit mitificata mali;
Quo non horridius Nymphis, nec atrocius ulli,
Si cerebrum, pectus, ventriculumve petat;
Cum malè dispositi, commoti aut sanguinis aestus
Adjiciunt morbo spicula plura fero.
Non nova nupta potens, illustri stemmate creta,
Suaviter opponens foeda pericla mali:
Non mille illecebrae linquendae, ac mille lepores,
A luis amplexu detinuere virum.
Nobile frustra itidem clamantque ignobile vulgus,
'Hostili accensas audeat arte febres!'
Non reputat fortis sapiensque ex more popelli,
Cui plus cordis inest plus habet et fidëi.
"Qui mores hominum multorum vidit et urbes" *
Cernere quosque viros intuituque sapit.
Fidens inde semel viso Gisorus, ab hoste
Casu, re medico, vulnera amica finit:
Nec renuente Deo, per quem feliciter arti
Cesserat, ingenium non latuisse mali.
Innuit Ipse imos bilis recludere fontes;
Pellere quae nimia est; attenuare chymum;
Ipse redundantem morbi subducere pastum;
Cum laxare fibras, tum referare poros:
Quo modice Gisors, justo post tempore, fervens,
Contentus medico febreque dixit, ave!

Mox

‖ Vide P. 200, l. 3. 4. * Ex Horatio.

Mox roſeae prodeunt maculae, ſerieque benigna
Concoctae, turgent ſemina mira mali;
Quae ſiccata cadunt: acerrimus humor in auras
Evolat, aut nondum corpora paſſa luem;
His ſolis quia fomes ineſt, ſine quo renovatas
Haud unquam eſt veras cernere variolas;
Quarum immunis agit Vir ſemper amabilis aevum,
Strenuus in bello, pacis ubique decus.

Haec ſi pauca licet conferre recentia priſcis,
Magnanimumque ducem maximo in orbe duci:
Si morbum accitum fas aſſimulare furori,
Quo praeviſa parùm febris anhela ruit.
Si medicum lingua diverſa, ex hoſte petitum,
Quis proprio aequiparans arte fideque parem,
Seligat——illuſtris viguit fiducia *Galli*
Quam *Graeci* major, nec generoſa minùs.
Hic ſibi ſubjecto confidit, at hic peregrino;
Hic chari a puero, ſperat hic hoſtis opem.
Crediderat *Macedo* macedonica verba tenenti,
Et Graiûm morbos, temperiemque ſuam.
Praepoſuit *Gallus* non gallica verba loquentem,
Oppoſitis ſuetum gentibus atque modis:
Cautum verò acrem miti praevertere morbum,
Apteque in varios inſinuare viros.
Salvete Heröes! ſimiles variique, miniſtris
Quorum veſtra ſalus ſecula ſera dabit!
Exitus acta probans medicum laudavit utrumque;
Quid mirum ſervo Regis ineſſe fidem?
Praeſtitit hanc etiam novus hoſtibus advena, grati
Praeſidio fretus, laetus amore Ducis.

J. K.

Numb. III.

I Intended, in ſome proper Part of this Treatiſe, to have given the further Hiſtory of Inoculation here to the Publick, or rather to the Continent; who, notwithſtanding their advancing Experience in it, conſider this Iſland and its Metropolis as the Centre, where much the greateſt Part of it is ſtill tranſacted. This would have been the more conſiſtent with my ſtill profeſſing the *Hiſtory* of it in my Title Page. But as the continuing ſuch an impartial one as I deſigned, depended on the Good-will, the Candour, and perhaps, in a few Inſtances, upon the Self-denial alſo of other Perſons, I publiſhed the following Advertiſement twice in ſome Evening Papers, full ſix Weeks before this Treatiſe was re-committed to the Preſs.

"A new Edition of the *Analyſis of Inoculation*, comprizing its *Hiſtory*, Theory and Practice, (now nearly digeſted and corrected with Additions) being called for; the Subſcriber, in Order to render it more compleat and uſeful here and abroad, will deem himſelf greatly obliged to all phyſical Gentlemen of Integrity and Character, eſpecially thoſe in the Country, for a ſummary and faithful Account of its Events, occurring within their own Experience for a few Years paſt, or even for the laſt and the preſent Year; ſuppoſing ſuch Gentlemen have no Intention of publiſhing

liſhing them otherwiſe. He is ſenſible that, in deſiring an Account of the Miſcarriages by it, if any, he is addreſſing an abſtracted and ingenuous Minority: but he ſhall not preſume to publiſh any Gentleman's Name without his expreſs Permiſſion. At the ſame Time he thinks it but fair to advertiſe, that in Order to prevent the Work's ſwelling to a greater Bulk and Price than it can properly bear, he muſt reſerve a Privilege of ſelecting ſuch Accounts as ſhall appear the beſt atteſted, the moſt uſeful and important. Whereever a Frank ſhall be inconvenient to the Writer, the Poſtage of a Letter, directed to the Subſcriber at George's Coffee-Houſe, Temple-Bar, will be thankfully paid; and the Obligation to his candid and worthy Correſpondents be honourably acknowleged,

By their moſt obedient humble Servant,

J. KIRKPATRICK.

Eſſex-Street,
Feb. 15, 1761.

Had I received a ſingle and material Information on repeating this Advertiſement, I ſhould have continued it; but as I have not, from February to Auguſt, I hope my Readers will excuſe what I have not been enabled to accompliſh. I have more than once acknowleged the only Fatality occurring to me by this Method ſince my former Publication; and I have mentioned a very few ſuch ſucceſsful Caſes, as I thought contained any Thing new or inſtructive. The Advertiſement I

have republiſhed here, to induce Practitioners to keep ſome Account of their Patients Caſes by Inoculation, which may ſometimes be of Uſe to themſelves; whatever Indifference they may have about ſuch Caſes being of Service to any others.

I take this Opportunity of adding one important, and one very curious Information on this Subject, of which I was too late apprized, to inſert them in their proper Sections.

The firſt is an Aſſurance from Dr. ARCHER, that out of about thirty three Subjects received into the Hoſpital for Inoculation, while they were kept in the proper Apartment, and preparing for it, eleven were ſeized with a Fever and other early variolous Symptoms, which terminated in the natural Small Pocks; and out of which eleven, three died. Inſtances of the ſame Kind, he ſays, had formerly occurred to him, but never in ſo large a Proportion. This abundantly proves the Neceſſity of that Caution we have ſo often recommended and inforced; that is, of keeping up the Subjects of Inoculation in *London* and in all conſtantly infected Places, a ſufficient Term to aſſure us of their not having already received accidental Infection: for want of which Precaution the Subjects of this Practice may fatally ſuffer, and the Practice itſelf be very unjuſtly accuſed.

The ſecond is an Account from Mr. GEORGE GIBBES, an eminent Practitioner at *Devizes*, *Wiltſhire*, which aſſures me, 'that a Gentle-'man, whom he inoculated in the common Man-

'ner,

'ner, was ſeized at the proper Time with the 'uſual Symptoms; but upon taking, at his own 'Deſire, a Doſe of *Magneſia*, to keep his Body 'open, his Complaints abated, but were ſuc-'ceeded by a *Diarrhœa*, which laſted two Days; 'no kind of Eruption ever appearing, more than 'an inflammatory Raſh over moſt Part of his Arm. He adds however, 'the Patient had reduced him-'ſelf to an Exceſs, both by Abſtinence and Evacua-'tions', which Mr. GIBBES thinks, together with his Looſeneſs, may ſufficiently account for a Non-Eruption, as undoubtedly it may; eſpecially if we conſider the Patient as naturally conſtituted rather for the milder Degrees of this Diſeaſe: But this Gentleman continues.—'After the Separa-'tion of the Slough from the Inciſion, I made 'Uſe of ſome of the diſcharged *Pus* on a Boy 'about eight Years old, his Arm from the third 'Day inflamed, on the eighth he ſickened, and a 'regular Small Pocks appeared to about the 'Number of twenty Puſtules.' This Hiſtory will ſufficiently confirm that we had given from Mr. WALL, p. 133 of the former Edition, which anſwers to 164, 165 of the preſent. It alſo ſuggeſts theſe practical Reflections, that Conſtitutions happily diſpoſed by Nature for this Diſeaſe, may be prepared too exquiſitely to receive variolous Eruption by Art. And notwithſtanding the effectual Communication of the Diſeaſe, by the Matter from their Inciſions, may conſiderably aſſure them of their Security from a ſecond Attack; yet, upon a further Reflection, we cannot deny that a mode-

rate

rate Eruption of the Inoculated would be ſtill more ſatisfactory to ourſelves : and this for Reaſons which may be ſeen P. 158. from Line 2 to 10 of this Treatiſe. This Caſe ſeems alſo to point at the great Importance of an excellent Preparation, in the moſt ſuſpected Habits for this Diſeaſe, as well as of a very ſlight one in the mildeſt ; and ſuggeſts the Poſſibility perhaps, of attaining ſo great a *Deſideratum* in Practice, as that of bringing a Majority of the worſt Subjects of the Small Pocks, into a State leſs ſuſceptible of its mortal Conſequences.

A Glossary, or brief Explanation of ſuch Terms of Art as unavoidably occur in this Work, and of a few other Words leſs commonly uſed.

A

Abdomen.—The Belly.

To *abrade.*—To ſhave, or rub, away, hence *abraded*, *Abraſion*, the Particles or ſmall Parts ſo rubbed away.

Abſceſs.—A Tumour, or Swelling, containing Matter ſeparated and diſcharged from the Blood or other Humours.

To *abſorb.*—To ſuck or dry up; hence *Abſorbents*, ſuch Medicines as dry up ſour Humours, as Crabs Eyes, Oyſter Shells, &c.

Acceſſary.—Additional.

Accretion, (growing up) viz. the Term of Accretion, the Time of our growing in Stature, &c.

To *accumulate.*—To heap up, or increaſe, hence *Accumulation.*

Acerb, (unripe) generally ſignifies ſuch Subſtances as are both rough and ſouriſh to the Taſte; hence *Acerbity.*

Aceſcent.—Diſpoſed to become, or turn ſour.

Acid.—Sour; hence *Acidity.*

Acrid, (ſharp) frequently applied to ſuch Medicines as are violent in their Operation; to Poyſons, or to ſuch Humours in the Conſtitution, as are unwholeſome and dangerous; hence *acrimoninous*, *Acrimony.*

Adeps.—The Fat; hence, *adipoſe.*

Adherent.—Sticking, clinging to, hence *Adherence*, *Adheſion.*

Adult.—Grown up, of mature Age.

Aera.—Some remarkable Period of Time from which Hiſtorians reckon, as the Chriſtian Æra, &c.

Aggregate.—Any Subject, or Subſtance, conſidered in the whole, altogether, or in the Lump, as we ſay: in which Reſpect it ſeems directly oppoſed to *Analyſis.*

Agile.—Nimble, lively, active; hence *Agility.*

Aliment.—Nouriſhment; hence *alimentary.*

Alkali.—Any Subſtance oppoſed to acid ones; whether a meer *Abſorbent*,

ſorbent, (which ſee) or ſuch a ſaltiſh one as Potaſh, &c. which begets a great Effervescence or Conflict, on being mixed with an Acid.

Ambient.—Surrounding.

Anachroniſm.—An Error in Chronology, or Date.

Analogy.—A Way of arguing to illuſtrate Things leſs known, by ſuch as are certain.

Analyſis—The dividing any Subject, or Subſtance, into all its compounding Points, or Parts, and giving a clear and diſtinct View of each. See *Aggregate*.

Angular.—Conſiſting of Angles or Corners.

Anthelminthic—Deſtructive of Worms.

Anility.—To be rendered into one Engliſh Word, may be called Old-Womanſhip.

Anticipation.—A preventing, pre-occupying, or being before-hand.

AORTA.—The chief Artery (a Blood Veſſel) of the Body, which receives the Blood directly from the Heart, and extends it through the arterial Syſtem.

APONEUROSIS.—A fine thin Membrane or Skin, ſuppoſed to be very nervous, and incloſing a Muſcle, or fleſhy Part, intended for ſome Motion.

Aporrhaeas, inviſible Particles riſing, or ſteaming as it were, from different Bodies or Subſtances.

APPARATUS.—(a preparing) the Invaſion or Attack of a Diſeaſe; the Furniture, or Preparation, neceſſary to any Operation.

Appetency.—Appetite, Deſire.

Appoſite.—Fit, proper, ſelect.

Appulſe.—The Force of Motion or Contact with which Bodies impreſs each other.

Aqueous.—Watery.

Arboreſcent.—Relating to Trees, to their Vegetation, or Growth.

To *aſſimilate*.—To render or make like; hence *Aſſimilation*.

Atoms.—The ſmalleſt, ultimate and indiviſible Parts, compounding various Subſtances.

ATRABILIS.—Black Bile, or Gall, Choler.

To *attenuate*.—To render very ſmall, thin or fine; hence *Attenuation*.

Attrition.—A wearing, rubbing, or grinding down.

Avolation.—A flying up, or flying off.

AURA,—A Vapour, Steam, or Air, whether contagious or otherwiſe.

Authentic.—Authorized, proved fully, admitted.

AXILLA.—The Arinpit; hence *axillary* Artery, Glands, &c.

Baſilary,

B

Báſilary, (Artery,) ſo termed by ſome Anatomiſts, from its entering at the *Baſis* or Bottom of the Scull.

Bifid.—Cloven, or divided into two Parts.

Biceps.—A particular Muſcle, or fleſhy Part, of the Arm.

Bolus, (a Morſel) it ſignifies the Size and Conſiſtence of a Medicine to be taken at once.

Brachiæus Internus.—A particular Muſcle, or fleſhy Part, of the Arm.

Bulletines.—Written Anſwers to Meſſages ſent to enquire the State of a Patient of high Quality in France, ſee P. 199.

C

Cachexy.—A bad Habit of Body; hence *cachectic.*

Cacochymy, (bad Juices) a foul Blood; hence *cacochymic.*

Cæteris paribus.—All other Circumſtances being equal.

Canals.—In a medical Senſe, any hollow Tubes or Pipes, containing an animal Liquor, or Fluid.

Canine.—Doglike, relating to Dogs, as the Canine *Rabies*, the Madneſs of Dogs.

Canthus.—The Corner between the Noſe and the Eye.

Capillary.—As ſmall as a Hair, ſuch as the capillary Veſſels, tho' there are many much ſmaller throughout the Body.

Capsula, (a little Caſe) a ſmall Receptacle for ſome ſecreted Humour.

Caries.—Rotteneſs, particularly of the Bones.

Carotides.—Large Blood Veſſels aſcending to the Head and Face.

Catamenia.—The monthly Diſcharges.

Catarrh.—A Defluxion, or Cold, diſtilling in Rheum from the Head.

Catastrophe.—The final Event of a Diſeaſe.

Cava.—The largeſt Vein in the Body, which returns the Blood to the Heart.

Cauſtic.—A corroding, eating, or burning Application.

Chlorosis.—The Green Sickneſs.

Choroides.—One Membrane, or Coat of the Eye.

Chronical.—Of long ſtanding, inveterate.

Chyle.—The white Liquor, made from our Food in the Stomach and Bowels, before its Mixture with the Blood; hence *Chylification*, the Faculty of making Chyle.

Citations.—Paſſages acknowleged to be taken from other Authors.

Coalition.—Union, Junction, thorough Mixture.

Coercive.—That which compells, or forces.

Coeval.—Of the ſame Age.

Coherent.—Touching, or very nearly ſticking together; hence *Coherence, Coheſion.*

To *collapſe.*—To cloſe ſo, as that one Side touches the other; hence *Collapſion.*

To *colliquate.*—To diſſolve, to melt; hence *Colliquation, colliquative.*

Comatoſe.—Sleepy, Lethargic.

Compact-Adj.—Cloſe, ſolid; hence *Compactneſs, &c.*

Complex.—Compound, not ſimple.

To *comminute.*—To leſſen, to grind, to reduce into ſmall Parts; hence *Comminution.*

Concomitant.—Accompanying, joined with.

To *concrete.*—To coaleſce, or grow into one Maſs; hence *Concretion,* &c.

Confluent.—That flows into, or runs together; hence *Confluence.*

Congenerate.—Begot together, at the ſame Time.

Connate.—Born together with, at the ſame Time.

Conſtipating.—Aſtringent, binding.

Contemporary, or *Cotemporary,* exiſting at the ſame Time.

Contiguous.—Adjacent, touching, or nearly ſo, hence *Contiguity.*

Contingent.—Accidental, fortuitous; hence *Contingence.*

Contractile.—Having a Power of ſhortening itſelf.

Convoluted.—Circling, twiſted, wound about.

Corpuſcles.—Very ſmall Bodies, or Parts of Matter. See *Atoms.*

Cortical.—relating to the Bark, or outſide, as, the cortical Subſtance of the Brain.

Crambe centies cocta, p. 65. boiling the Cale to a Poultis, ſpoken of any needleſs and tireſome Repetition.

Crasis.—Temperament, Conſtitution, Mixture or Conſiſtence.

Crassamentum.—The red and more ſolid Part of the Blood, in a concrete State.

Crisis.—The Time, or the Evacuation, that proves the Turn of the Diſeaſe, and often ſerves to judge of its Event; hence *critical.*

Criterion.—A Touchſtone, or Tryal.

Cruor.—The red denſe Part of the Blood, but rather before it is ſeparated and concrete.

Cutis.—The true Skin, hence *Cuticular*; and *Cuticle,* the ſcarf Skin.

D

DEbility.—Weakneſs, Feebleneſs; hence to *debilitate,* &c.

Decumbiture.—The Time of lying down Sick; hence *Decumbent.*

Defæcation.—A clearing from the Dregs, a making fine or pure.

Defi-

Defiguration.—A Deſcription, or repreſentation in Words.
Deflagration.—A ſetting Fire to, with ſome Purpoſe and Intention.
Deglutition.—The Action of ſwallowing.
Deleterious.—Of violent Operation, poiſonous, deadly.
Denſe.—Cloſe, ſolid; hence *Denſity.*
Dentition.—The Act, or Time, of cutting Teeth.
Denuded.—Stript naked.
Depletion.—Emptying.
Depreſſion.—Preſſing down, ſinking, lowering.
To *depurate.*—To cleanſe from the Dregs; hence *Depuration.* See *Defæcation.*
Deſideratum.—An undiſcovered, but much deſired Improvement in any Art or Science.
Deſpumation—The Act of purifying by removing the Scum or Foam.
To *detrude.*—To thruſt down lower; hence *Detruſion.*
Detumeſcence.—The Sinking or Abatement of a Swelling.
Diffuſion.—A ſpreading forth, or wide about.
DISPENDIUM.—Expence, Waſte, Loſs.
To *diverſify.*—To make different, to vary.
Dormancy.—A State of Inaction.
Ducts.—Small Pipes or Paſſages through which a Fluid is conveyed, or ſeparated.
DUODENUM.—The Gut immediately joining to the lower Orifice of the Stomach.
Dyſcraſy.—A diſtempered unequal Mixture of any of the animal Fluids.

E

E Contra.—On the other Hand.
To *efface.*—To deſtroy, or blot out.
Effervеſcence.—The becoming hot by inteſtine, or inward Motion.
EFFLUVIA.—The ſmall Particles continually flying off from Bodies.
Effete—Worn out, barren, inactive.
To *elaborate.*—To produce and finiſh with Labour and Accuracy; hence *elaborated*, &c.
Elaſtic.—Springy, the Power of recovering the Shape from which it was forced.
ELEPHANTIASIS.—A Species of Leproſy, in which the Limbs are ſuppoſed to appear clumſy, rough and ſhapeleſs, ſomewhat reſembling an Elephant's.
Eligible.—Fit to be choſen, preferable.
EMBRYO.—The Offspring in the Womb, while yet forming and unfiniſhed.
Emetic.—Cauſing vomiting.

Emigration.—A Change of Habitation.
Emolument.—Profit, Advantage.
Empyreumatic.—Being in the State of burned Subſtances.
Endemic.—A Diſeaſe peculiar to a Country or People.
Energy.—Force, Vigour, Influence; hence *energetic*, &c.
Epidemic.—Seizing many Perſons at the ſame Time and Place.
Epiſpaſtic.—Drawing, bliſtering.
To *equiponderate.*—To weigh equally with, to counterbalance, or be equivalent.
To *eradicate.*—To root out; hence *Eradication.*
Erratic.—Wandering, unfixed.
Eruptive.—Breaking out.
Eryſipelatous.—Reſembling, or relating to St. Anthony's Fire.
Eſculent. Eatable, fit for Food.
Etymology.—The Deſcent and Derivation, or, as it were, the true Source and Reaſon of any Word.
Evaneſcent.—Vaniſhing, unperceivable.
Evaporable.—Which may be diſſipated, or conſumed in Fume or Vapour.
Euge bone et fidelis!—Well done thou good and faithful Servant!
To *evince.*—To prove beyond Diſpute.
Eulogy.—Commendation, Applauſe.
Evolution.—The State of being further unrolled, unfolded, or extended.
Eupeptic.—Eaſy of Digeſtion.
Excoriation.—Loſs of Skin, flaying, bliſtering.
Excretory.—An Epithet joined to Animal Pipes or Parts aſſigned to the ſeparating and expelling Superfluities.
Exhaling—Sending out Vapours.
To *exhibit.*—To ſhew, give, or adminiſter; hence *Exhibition.*
Exility.—Extreme, and evaneſcent Smallneſs.
Extravaſated—Being forced out of the proper Veſſels, out of the Circulation.
To *Exude.*—To ſweat, or ooze out.
Ex nihilo nihil fit.—Nothing produces nothing.

F

FAſcinating.—Bewitching.
Fauces.—The Inſide of the Jaws and Mouth.
Febrile.—Feveriſh.
Feculent.—Having Dregs, foul, impure.
Fibre.—An animal Thread or String, whether fleſhy or membranous, &c. hence *Fibrills*, *fibrous.*
Figuratim.—In Figures, or numeral Types.
Fiſſure.—A Cleft, a Slit.

Flatu-

Flatulent.—Cauſing Wind, windy; from *Flatus*, Wind.
Fluids.—Liquids of any Sort.
Foetor.—A Stink, any ill Smell.
Foetus —The Child in the Womb, when entirely formed.
Fomes.—The Fuel, Nouriſhment, or Matter of a Diſeaſe.
A fortiori.—For a ſtill ſtronger Reaſon.
Fortuitous.—Accidental; whence *fortuitouſly*.
To *fruſtrate.*—To defeat, to diſappoint.
To *fuſe.*—To melt, diſſolve, or be diſſolved; whence *Fuſion.*

G

Gelatinous.—Of the Conſiſtence of a Gelly.
Generable.—That may be produced or begotten.
Genuine.—Real, not adulterated or ſpurious.
To *germinate.*—To ſprout, bud, or ſhoot.
Glands.—Vulgarly called Kernels, when ſwelling in the Neck, &c. certain ſmooth and ſolid Parts, tho' containing Pipes for ſecreting ſome Fluid from the Blood.
Globules.—Generally apply'd to the red Particles of the Blood, which appear globular or round through the Microſcope.
Graveolent.—Strong-ſmelling, as Garlick, Rue, &c.

H

Hæmorrhage.—A flowing of Blood from any Part.
To *heſitate.*—To doubt; hence *Heſitation.*
Heterogeneous.—Of another, a different Kind.
Hic labor, hoc opus eſt.—This is the Tryal, the Difficulty.
Homogeneous.—Of a like Kind, Subſtance, or Nature.
Humectation.—A Moiſtening.
Hypotheſis.—A Syſtem ſuppoſed, not proved.

I

Idea.—A Form, or Notion, conceived by the Imagination: hence *ideal*, imaginative.
To *imbibe.*—To drink, or ſuck in: hence *Imbiber*, the Perſon ſucking in and ſwallowing Infection with his Spittle.
Imminent.—Near at Hand, impending.
To *immitt.*—To ſend in.
Impermeable.—Impaſſable.
Imponderable.—Too light or ſubtil to be weighed.
Impreſſible.—That which may be impreſſed upon, or affected.
Incident.—Liable, caſual.
Incognita.—Things unknown.

Increaſ-

Incraſſation.—A growing thick.
Incubation. (a lying upon) a hatching.
Indelible.—Not to be blotted out, or effaced.
Ineffete.—Not worn out, vigorous.
Infarction.—A ſtuffing up, or Obſtruction.
Inflation.—A blowing up, or ſwelling from Wind.
Ingurgitation.—A Swilling; or ſwallowing a great Quantity of any Liquids.
Inherent.—Exiſting inwardly, inborn.
Inodoration.—Infection by Smell.
Inquieſcent.—Reſtleſs, continually moved.
Inſalutary.—Unwholeſome.
Inſcrutable.—Unſearchable, indiſcoverable.
Inſolation.—A long Expoſure to the Sun.
To *inſorb.*—To ſuck, or ſwallow in.
To *inſpiſſate.*—To make thick, or ſtiff.
Inſtillation.—Pouring in by Drops.
Integuments. (Coverings)—The Skin, Cuticle, &c.
Intenſe.—Vehement.
Intervention.—A coming between, or Interpoſition.
Inteſtines.—The Gutts.
Intuitive.—Diſcerning or diſcovering at once, without Reaſoning or Deduction.
Involepements.—See *Integuments.*
To *inveſtigate, &c.* to trace, to diſcover; hence *Inveſtigation.*
To *involve.*—To roul within, or contain.
Irrational.—Without Reaſon.
Irrefragable.—That cannot be confuted.
Irritation.—Senſation attended with Pain; hence *irritable, irritating.* See *Stimulus.*
Jugulars.—Certain Veins of the Neck.

L

Lacteals.—Veſſels conveying the Chyle made in the Bowels into others, which convey it into the Blood: hence *lacteſcent,* milky.
Languor.—Faintneſs, Relaxation, Waſte of Spirits.
Lapideſcent.—Growing or turning to Stone.
Laſſitude.—Wearineſs, Fatigue, obtuſe Pain, with Liſtleſſneſs to Motion.
Latent.—Hidden, concealed.
Latex.—A Liquid of any kind, a Spring, or Source.
Lentor.—Viſcidity, Sizineſs.
Leucophlegmatic.—Abounding with cold Phlegm, which diſpoſes the Body to be pale.

LITERATI.—The Learned.

Litigating.—Contending for, Contentious.

Lixivious.—Impregnated with ſome alcaline Salt, as Pot-aſh or the like.

Lucrative.—Gainful, profitable ; ſometimes, ſordid.

LUMBAGO.—A very acute Pain about the Loins, frequently preceding the confluent Small-Pocks.

LUSUS INGENII.—A ſporting, amuſing Exerciſe of the Wit or Imagination ; in which an Author often aſſerts more than he thinks or believes.

Lymph.—A tranſparent, colourleſs animal Fluid, ſuppoſed by ſome the thinner Part of the *Serum* of the Blood.

M

TO *macerate.*—To infuſe, or ſteep for a conſiderable Time, with, or without Heat.

Manuſcript.—Sometimes wrote contractedly *M. S.* a Book or Pamphlet written, not printed.

Medical.—Phyſical.

To *mediate.*—To interpoſe, to be between.

MEDIUM.—Any Thing intervening, and ſometimes involving, as, our common *Medium*, the Air ; alſo the juſt Temperature between Extremes.

Medullary,—conſiſting of, relating to, or reſembling Marrow : as, the medullary Subſtance of the Brain.

MENSES.—See *Catamenia.*

MENSTRUUM.—Any Liquid uſed to diſſolve different Subjects, or to extract the Virtues of different Ingredients, by Infuſion, or Decoction.

Mental.—Intellectual, exiſting in, or relating to the Mind.

Metaphyſical.—Relating to Metaphyſics, or the Doctrine of the general Affections of Subſtances exiſting : alſo ſupernatural, when ſpoken of ſuch *Phaenomena* as really exiſt in Nature ; but whoſe Cauſes exceed the Comprehenſion of the human Faculties ; ſuch as Gravity, Magnetiſm, &c.

MIASMA, pl. MIASMATA—Infectious and inviſible Particles.

Modification—The Act of giving any Thing or Subject, new accidental Differences.

Morbid.—Diſeaſed, ſickly.

Morbific.—Cauſing a Diſeaſe, or Sickneſs

MUCUS.—Any ſlimy or viſcid animal Humour, as that from the Noſe, &c.

Multifarious.—Manifold, that which conſiſts of various Circumſtances, and is capable of various Applications.

Multiform.—Having various Shapes or Appearances.

N

NAUSEA.—A Sickneſs at Stomach, a Qualm, an Averſion to Food, or to any particular Food.
Negative.—A Denial, the Thing denied.
NEXUS.—The Connexion, or Union.
NIGRUM PIGMENTUM.—A black, unctuous, or ſlimy Humour, lining the *Choroides*, one of the Coats of the Eye.
Non-attainment.—The not obtaining, not attaining or diſcovering.
NUBECULA.—A little Cloud, or Vapour.

O

OBnoxious.—Subject to, liable.
Obtuſe.—Not acute, or violent, not ſharp; dull, heavy.
To *occupy.*—To poſſeſs, to take up, to employ.
Odour.—A Smell, whether ſweet, foetid, or otherwiſe.
OEDEMA.—A Tumour, or Swelling, chiefly a moiſt and ſoft one.
OESOPHAGUS.—The Gullet.
Olfactory.—Pertaining to Smell, as, the Olfactory Nerves.
Opacity.—Cloudineſs, Want of Tranſparency.
Operative.—Endued with a Power of acting, whether more or leſs.
Operoſe.—Laborious, troubleſome, or tedious.
Ophthalmy.—An Inflammation of the Eyes.
Organ.—A natural, or artificial Inſtrument; as the Eye and Ear are the Organs of Sight and Hearing.
Organiſation.—That Conſtruction of the Parts by which they are diſpoſed to co-operate.
Orgaſm.—Sudden and vehement Paſſion of different Kinds; violent Stimulation.
Orifice.—An Opening, or Inciſion, ſmall or large.
Oſcillation.—Moving, or vibrating, like a *Pendulum.*
To *oſſify.*—To grow or become bony.
OVARIUM.—The Ovary or Egg-bag, ſometimes termed the female Teſticle.
OVUM.—The Egg, contained there.

P

PABULUM.—The Food, Fuel, or inherent Matter of a Diſeaſe.
Palpable.—Perceivable by the Touch, coarſe, eaſily perceived.
Pancreatic.—Of, or belonging to the PANCREAS, or Sweet Bread, a glandular Bowel of the Belly.
Paradoxical.—Contrary to the received Opinion, ſtrange, unexpected.

Parotid

Parotid.—Adjacent to the Ear, as the parotid, or ſalivary, Glands.
Paucity.—Fewneſs, the Smallneſs of Number or Quantity.
PEDUNCULI.—The Stalks.
Perflable.—Through which the Wind or Air may paſs, airy, open.
Periſtaltic.—(Motion) that contractile, and worm-like Motion of the Guts, by which their nutritious Contents are protruded into the lacteal Veſſels, and their Fæces ſtill lower.
PERISYSTOLE.—The ſhort Pauſe between the Contraction and Dilatation of the Heart.
Permeable.—Veſſels which are hollow throughout, ſo that Fluids may paſs through them.
To *perſpire.*—To ſteam through, or be expelled by the Pores of the Skin.
To *pervade.*—To make its way, to paſs through.
PHAENOMENON, pl. *na*, an Appearance in the Works of Nature.
PHLEGMON, a Boil, an inflammatory Tumour.
Phyſiology.—The Doctrine of the Works of Nature; hence *Phyſiologiſt, &c.*
Piloſity.—Hairineſs.
Plaſtic.—Having the Power or Faculty of giving Form.
Plenitude.—Fullneſs.
Plethoric.—Being of a full Habit.
Porous.—Having ſmall Vents or Paſſages. See *permeable.*
Preciſe.—Exact, ſtrict, accurate; hence *Preciſion.*
To *preclude.*—To ſhut out, to prevent, or anticipate.
To *preponderate.*—To exceed in Weight, to overbalance.
Prevalence.—Superior Power, Predominance.
Primary.—Firſt, original, principal.
PRIMORDIA.—The Origins, the firſt Seeds, or indiviſible Principles.
Procatarctic.—Foregoing, antecedent, pre-exiſtent; as, the *procatarctic* Cauſe.
Proceſs.—The progreſſive Courſe of a Diſeaſe, or of a chemical Operation.
Prolix.—Tedious, not conciſe.
Prominent.—Sticking out, or forward; hence *Prominence.*
Prophylactic.—Preſervative, preventive.
To *protrude.*—To thruſt forward.
Puberty.—That Term of Life, when the generative Faculty firſt appears.
Pulmonary.—Pertaining to the Lungs.
Pungency.—The Senſation of Sharpneſs, or great Heat on the Tongue, from pungent and acrid Subſtances.
Purulent.—Conſiſting of *Pus* or Matter.
PUS.—The Matter of a well digeſted Sore or Inflammation.

Puſtule.—A ſmall Swelling, Puſh, or Efflorescence, which generally ſuppurates.

Putrid.—Rotten, Corrupt; hence *Putreſcence, Putridity.*

Q.

QUA DATA PORTA RUET, *i. e.* It will break forth, where it meets with the leaſt Reſiſtance. Spoken of eruptive Matter.

To *Quadrate.*—To ſquare, to ſuit, to agree or conſiſt with.

Quadripartite.—That in which four Perſons, or Parties, are concerned.

Quadrupeds.—Four-Footed Animals.

The QUANTUM.—The Quantity, the Doſe.

QUOAD HUNC.—With Reſpect to this very Perſon, this Individual.

The QUOMODO.—The Manner *how*, or *by which.*

R

RABIES.—Rage, Madneſs; particularly that of a Dog.

To *ramify.*—To part, or ſpread forth into Branches; hence *Ramification.*

RATIO.—The Proportion by Compariſon; hence, the

RATIONALE.—The Enquiry into, and Account of, the Cauſe of any phyſical *Phaenomenon*, or Operation.

Recent.—New, lately occurring.

Recipient.—The Perſon, or Subject, receiving.

To *recur.*—To go, or come back, to revive in the Mind, to have Recourſe to.

Redolent.—Sweet of Scent.

To *regenerate.*—To re-produce, to beget or breed anew.

REGIMEN.—The Manner of Living directed in any Diſeaſe, or under the Courſe or Operation of any Medicines.

Regurgitation.—Reſorption, the Act of ſwallowing back again: an Over-ſwilling, or *Ingurgitation.*

Remiſs.—Slack, not violent, not intenſe.

To *renovate.*—To renew, to reproduce, hence *Renovation.*

To *repleniſh.*—To fill abundantly, to ſtock; hence *Replete, Repletion, &c.*

To *repreſs.*—To check, to repell, or ſubdue.

Reſpiration.—The Act of Breathing.

RETE MUCOSUM—A very fine Membrane, or Covering, between the *Cuticle* and *Cutis*, the Scarf and the true Skin.

Retortion.—A turning back, a receding from each other, a ſpreading; as, a Retortion of the Lips of the Orifice in the inoculated Limb, or Part.

Retroceſſion.—A going, or giving back.

Retro-

Retroſpection.—The Act of looking back, or of *reviewing*, *conſidering*.

Rigid.—Stiff, hard, dry, inflexible.

S.

Salino-oleoſe.—Abounding with ſaline and oily Humours.

Saliva.—The Spittle: hence *Salivary*, *Salivation*.

Sanguine.—Ruddy, abounding with Blood.

Sanity.—Health of Mind or Body.

Scapulæ.—The Shoulder-blades

Scrophulous.—Diſeaſed with the *Scrophula*, or Kings Evil.

To *ſecrete.*—To ſeparate, or ſecern: hence *Secretion*, the Act of *Secreting*, or the Fluid ſecreted.

Semen.—The Seed, whether of Animals, Vegetables, or Diſeaſes: hence

Seminium.—The Seed-plot, Subject or Matter, wherein and by which the Seeds germinate, and are nouriſhed.

Series.—The Succeſſion, Order, or Concatenation of Things.

Serum.—The thin watery Part of the Blood, as diſtinguiſhed from the red, or more ſolid.

Sessile.—Flat, depreſſed, not prominent, nor filled: as the *Seſſile* Puſtules or Pocks; when not properly filled and ſuppurated.

Signatures.—Signs, Indications, Proofs.

Simile ſimili gaudet—Like to like, Birds of a Feather, &c.

Sinuous.—Crooked and hollow, winding.

Solearia.—Plaſters, or Pultices, apply'd to the Soles of the Feet, and chiefly in acute Diſeaſes.

Soluble.—Which may be diſſolved.

To *ſpecify.*—To mention with ſome Proof and Diſtinction.

Specific.—A Medicine appropriated to a particular Diſeaſe; and limited by ſome to produce its Effect, without any ſenſible Diſcharge or Operation.

Spherical.—Round: hence *Sphericity*.

Spicular.—Sharp pointed, piercing, wounding: from *Spicula*, Darts, Stings.

Squalidity.—Filthineſs, Naſtineſs.

Stadium.— (a Furlong) any Stage or Term of a Diſeaſe, or of human Life.

Stamina (Threads) apply'd by Phyſicians to animal Fibres; as the Diverſity of their Strength or Weakneſs, their Tenſion or Relaxation, is ſuppoſed to form different Conſtitutions.

Stimulus.—(a Sting, a Spur or Goad) whatever excites Senſation acutely: hence to *ſtimulate*, *Stimulation*.

Strabismus.—A Squinting.

Strumous.—See *Scrophulous*.

Sub-acid.—Souriſh, moderately Sour.
Subclavian.—A Vein under the *Clavicle,* or Collar-bone.
SUBSTRATUM.—The Thing, Part or Perſon ſubjected to any Effect or Operation.
SUCCEDANEUM.—Something ſubſtituted in the Place of another.
SUCCULENCE.—Juicyneſs, Moiſture, *Succulent,* Adj.
Suffuſion.—The Act of ſpreading, as it were, with a Stain, or Tincture.
Supercilious.—Proud, arbitrary, haughtily formal.
Superfoetation.—A Conception occuring before the Maturity or Excluſion of a former one.
To *ſuppurate.*—To ripen to Matter, as a Boil or Puſtule: hence *Suppuration.*
Supputation.—Reckoning, Calculation.
Symbol.—A Type, a Repreſentation of, or Alluſion to ſomething elſe.
Symptom.—A Sign, a Token; ſomething occurring not neceſſarily from the original Cauſe of a Diſeaſe, but concurring with it.
Syſtem.—A Scheme, uniting many Things methodically under one Title or Subject.
SYSTOLE.—The Contraction of the Heart.

T.

TEguments, (Coverings) ſee *Integuments.*
Tenſion.—The State of being tight, braced, not relaxed.
Tenuity.—Smallneſs, Exility, Thinneſs.
Tepid.—Gently, mildly hot, agreeably warm.
To *terminate.*—To be limited, to end, to conclude.
Topic.—A general Head, or Subject: hence *topical,* local.
TORPOR.—Numbneſs, Dulneſs, Inſenſibility: hence *torpid.*
Tranſfuſion.—Pouring from one Veſſel into another: as the *Tranſfuſion* of the Blood.
TRACHEA.—The Windpipe.
Tranſudatory.—That which ſweats, or perſpires, through.
To *tranſmit.*—To ſend from one Place or Part to another.
Tremors.—Morbid Tremblings.
Tubes.—Hollow Pipes: hence *tubular, Tubuloſity.*
Turgeſcence—The Act of ſwelling, of being expanded into more Space or Room.

V.

VAlid.—Convincing, certain, forcible: hence *Validity.*
Variolous.—Of, or relating to the Small Pocks: hence *variolescent, &c.*

Vaſ-

Vaſcular.—Conſiſting of, or relating to the Veſſels of an Animal.
Vehicle.—(Any Carriage,) that Part of a Medicine which makes it potable, or leſs diſagreeably ſwallowed.
Velocity.—Swiftneſs.
VELUM PUPILLAE.—A very delicate Membrane of the Eye, ſuppoſed peculiar to the Foetus, and diſappearing after the Birth.
Ventricle.—The Stomach; or certain Cavities in the Brain.
Vertebrals.—Blood Veſſels, aſcending from the Back into the Brain.
Vertigo.—A Diſeaſe of the Head, attended with a ſeeming Rotation of Objects.
Veſication.—A Bliſtering.
VIRUS.—Poyſon, particularly that received from an Animal, *quaſi vi immiſſum*, as darted in with Force: hence *virulent*, &c.
VISCERA.—The Bowells.
Vivid.—Lively, briſk: hence *Vivification*, the Act or Faculty of imparting Life.
Unventilated.—Not aired.
Volatile.—Apt to fly, or evaporate, away.
Uterine.—Relating to the Womb.

ERRATA.

P. 6, l. 17, insert *the* between *from* and *suppurated.*
P. 14, l. 14, for *visible* read *invisible.*
P. 78, l. 24, for *Can a* read *Canals.*
P. 94, l. 8, for *similiar* read *similar.*
P. 105, l. 21, for *Christain* read *Christian.*
P. 121, l. 13, for *Ligitations* read *Litigations.*
P. 206, l. 21, for *troblesome* read *troublesome.*
P. 230, l. 4, after *Solids* add *are.*
P. 231, l. 20, for *Sucession* read *Succession.*
P. 233, l. 26, for *Terms* read *Term.*
P. 281, N * l. 3, for *Couse* read *Course.*
P. 286, l. 15, insert *I* between *and* and *have.*
P. 303, l. 24, for *two* read *too.*
P. 309, N * for z75 read 275.
P. 311, l. 5, dele one *the.*
P. 321, last Line, for *havea dmitted* read *have admitted.*
P. 358, l. 23, for *Mananagment* read *Management.*
P. 371, N † for 3z1 read 321.
P. 393, l. 18, for *Acknowlegment* read *Acknowlegement.*
P. 402, l. 11, for *majoricopia*, in one Word, read *majori copia.*

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